DCMR-91-P00008

MAXIMIZATION OF AUTOMATIC PAYMENT OF INVOICES (API) IN THE CONTRACT PAYMENT FUNCTION

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OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY

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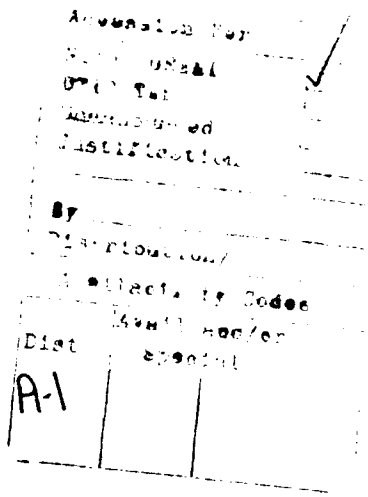

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FOREWORD

This report documents cost benefit analyses for eight messages that require manual payments in the Mechanization of Contract Administration Services (MOCAS) system, as well as Electronic Data Interchange (EDI) initiatives pertaining to contract payments at Defense Logistics Agency (DLA) and Defense Finance and Accounting Service (DFAS) payment centers. MOCAS pays invoices automatically if the data base information exactly matches the contractor invoice information. Invoices are paid manually if an error has been made anywhere in the data input process, or in cases where a decision (usually at the clerical level) is required to control expenditure of government funds.

The results show that numerous manual payments could be avoided by implementing several procedural and MOCAS system changes. The relative frequencies of the different conditions causing manual payments were determined by a Pareto analysis. It used information from a special data base built with information collected from each DLA Payment Center. The study estimates that by implementing all the recommendations the payment centers could save over $10 million annually. This results from saving 444 workyears, 195 of which are in the manual payment area. The effect of the workyear savings in the manual payment area would be to increase the overall API rate from the current 50 percent to an estimated 64 percent. Besides the savings above, that result when the messages that were analyzed appear alone, an additional 17 workyears will be saved by eliminating the manual payments occurring when these messages appear with each other. This would increase the overall API rate to over 65 percent.

Based on the results of this study, the MOCAS payment process should be changed to implement the recommendations in this report.

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I. INTRODUCTION

The Defense Contract Management Command (DCMC) paid 1,598,506 invoices in Fiscal Year (FY) 1990. This contract payment function is very labor intensive. Contract, contract modification, contractor invoice, and material acceptance data all require substantial clerical input. When data matches and certain contract information has been validated, the Mechanization of Contract Administration Services (MOCAS) system will pay invoices automatically. Every invoice goes through this validation process, called the Automatic Payment of Invoices (API) system. If MOCAS contains data found to be erroneous or that cannot be validated, then payment by MOCAS is only partly automatic (because the invoice still goes through the API system). However, in this case additional manual work has to be done by a payment clerk.

Some tasks (such as: contract, modification, invoice, and acceptance data input; filing; reconciliation, etc.) are done for all invoices regardless of whether the payment is automatic or manual. It is estimated that 75 percent of personnel involved in contractor payment (over 1,700 people) perform these functions that are common to both automatic and manual payments. The remaining 25 percent (almost 600 people) work solely on functions related to making payments manually. See Appendix A for details of these estimates. Since the average API rate for all payment centers is 50 percent, 799,253 payments are made manually rather than automatically. Any changes that increase the API rate (decrease the number of manual payments), decreases the amount of work done manually.

The Administrator of the Defense Logistics Agency (DLA) Finance Center (DFC) asked the DLA Operations Research Office Chicago (DORO-C) to investigate and analyze the causes of manual payments of invoices in the Mechanization of Contract Administration Services (MOCAS) system. He felt that the use of the API system was not as great as it could be, but did not have the analytical evidence. He wanted to know if operational improvements could be made to increase the API rate. We were also to perform a cost-benefit analysis of manual Material Acceptance and Accounts Payable Report (MAAPR) conditions which prevent API.

II. METHODOLOGY

A sample data base was created by downloading two weeks of daily manual MAAPRs from each Defense Contract Management Region (DCMR) payment center and the DFC. MAAPR messages that were for information only were eliminated, leaving only messages about conditions that prevent API. Those messages that only stop API under certain conditions (e.g., final shipment only, if not progress payment, etc.) were counted only when these conditions were met. A total of 26,035 MAAPR messages on 19,620 manual MAAPR reports were collected. A Pareto analysis was done to determine the relative frequency of the MAAPR messages causing manual payments. This data base also enabled the simulation of the impact of

alternatives to current operating procedures. A detailed breakdown of the frequency of all manual MAAPR messages by payment center is in Appendix B.

The methodology of this project is to analyze the operations used with each MAAPR message. In so doing, the costs, savings and risks of the status quo, as well as plausible alternatives, are examined where appropriate and to the extent worthwhile.

A total of nine manual MAAPR messages were studied in-depth. They were selected based on the Pareto chart and the potential for payback. In addition to these individual messages, a cost-benefit analysis was done on current and potential Electronic Data Interchange (EDI) initiatives within DLA pertaining to the contract payment function. The messages studied include:

- the three most frequent messages (MAAPR-INV $ NOT EQUAL, EVIDENCE OF SHIPMENT REQUIRED, and MANDATORY REVIEW/OTHER)

- the three Transportation messages (FOB ORIGIN/MINIMUM SIZE, GUARANTEED MAXIMUM SHIPPING WT and TRANSPORTATION AMT EXCEEDED) NOTE: The TRANSPORTATION AMT EXCEEDED message was documented under separate cover, "Threshold for Transportation Charge Review Cost Benefit Analysis", DCMDC Operations Research Office, September 1990

- the two messages used in collecting funds from contractors (VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS)

- the only message involving a contract quality provision (FIRST ARTICLE APPROVAL REQUIRED)

An analysis of the cost of a manual payment of an invoice was also performed. These costs are those that are additional to those that are common to both manual and automated payments. This cost was determined to be $19.98 per manual payment. Appendix C details this analysis.

III. ANALYSIS

Detailed analyses of the eight MAAPR messages and the EDI initiatives may be found in the following appendices:

- MAAPR-INV $ NOT EQUAL -- Appendix D

- EVIDENCE OF SHIPMENT REQUIRED -- Appendix E

- MANDATORY REVIEW/OTHER -- Appendix F

- VO DEDUCTION PENDING -- Appendix G

- CONTRACTOR INDEBTEDNESS -- Appendix G

- FIRST ARTICLE APPROVAL REQUIRED -- Appendix H

- FOB ORIGIN/MINIMUM SIZE -- Appendix I

- GUARANTEED MAXIMUM SHIPPING WT -- Appendix I

- ELECTRONIC DATA INTERCHANGE (EDI) INITIATIVES FOR CONTRACT PAYMENT -- Appendix J

IV. RECOMMENDATIONS

Recommendations involve a combination of procedural and system changes, many of which are very minor. Procedural changes (along with very small MOCAS changes) include removing the following from the list of messages preventing API: FIRST ARTICLE APPROVAL REQUIRED (Appendix H), FOB ORIGIN/MINIMUM SIZE (Appendix I), and GUARANTEED MAXIMUM SHIPPING WT (Appendix I). It was determined that preventing API because of these conditions was not cost effective.

System changes (which may also require procedural changes to implement) would involve altering the way certain messages are handled. MAAPR-INV $ NOT EQUAL would no longer stop API in cases where the contractor invoiced for less than the MAAPR amount (Appendix D). To resolve one of the problems when the contractor invoices for more than the MAAPR amount, MOCAS would indicate on-line when transportation charges are authorized (Appendix D). The current procedures for dealing with EVIDENCE OF SHIPMENT REQUIRED (Appendix E) would remain in effect. However, an indicator would be placed on the Invoice Data input screen alerting the input clerk that Evidence of Shipment is indeed required. The MANDATORY REVIEW/OTHER (Appendix F) message would no longer be generated along with the AWAITING HARD COPY RECEIPT message. Once the hard copy of a contract is received, it would eliminate the initial message and replace it with a new message stating that the hard copy still needs to be reviewed. All MANDATORY REVIEW/OTHER messages that have no accompanying explanation of their existence would be purged from the data base. A new message would be established for lump sum deductions, now being processed under the VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS messages (Appendix G).

Other system changes are more extensive in nature. The Military Standard Contract Administration Procedures (MILSCAP) contract abstracts would be enhanced to include sufficient data on which to base payment (Appendix J). This would include adding data fields for necessary information and also changing the method of data transfer from fixed length records to variable length records. Efforts are already under way to make these options viable. So far, the efforts have met with varying degrees of success. The VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS messages, as well as lump sum deduction processing (Appendix G), would be automated. Once entered into the data base, there would be no more manual payments in these situations.

A strictly procedural change would have Transportation Specialists sample compliance reviews for the FOB Origin - Minimum Size Shipments and Guaranteed Shipping Characteristics clauses (Appendix I).

The savings from implementing the EDI initiatives in Appendix J are potentially over $8 million annually. This corresponds to a savings of 339 workyears, most of which come from the tasks common to both API and manual payments (contract and invoice data input). The remaining 44 workyears are in the manual payment area. The remaining minor systems and procedural changes (estimated to have a onetime cost of $10,000) could save $2.25 million per year. This savings corresponds to 85 workyears (8 of which would be in Transportation, the rest in the manual payment area). Another $550,000 could be saved by automating lump sum deductions and collecting funds owed by contractors. This should be used to justify a systems change now, if Contract Payment and Reporting (CPR) is not implemented shortly. Implementing all of the recommendations in this study would save over $10 million, or 444 workyears. Of these workyears, 141 are in the manual payment area, serving to increase the API rate from the current 50 percent to an estimated 64 percent. These analyses estimate savings only for when the messages analyzed appear alone. Accounting for those manual payments occurring when the analyzed messages appear together would save 17 more workyears in the manual payment area. This would increase the overall API rate to over 65 percent.

It is recommended that the Pareto chart created from data downloaded from the payment centers be generated periodically (quarterly, semiannually, or annually). It would give management a tool to focus on the messages causing the most manual payments and measure the results of efforts to increase the API rate.

APPENDIX A

Percent of Payment Personnel Working Tasks Common to Both the API and Manual Payment Process Vs Manual Payment Alone (Sample of 4 Payment Centers)

Payment Center:	ATL		CHI		DFC		STL		Total	
Contract Payment Personnel:	#	%	#	%	#	%	#	%	#	%
Common to both API & Manual Pays:										
a- Reconciliation	6	4	12	13	67	7	2	2	87	7
b- File Clerks	5	4	5	5	20	2	2	2	32	3
c- K Data Input	12	8	6	6	69	8	14	12	101	8
d- Invoice Input	7	5	4	4	41	5	8	7	60	5
e- Contractor Relations(1)	2	1	1	1	8	1	1	1	12	1
f- Other (2)	51	36	24	25	481	53	26	22	582	46
Supervisors (For a-f above)	18	13	13	14	27	3	18	15	76	6
Total API Related	101	71	65	68	713	78	71	60	950	75
Only for Manual Payments:										
e- Payment Clerks	31	22	23	24	152	17	39	33	245	19
f- Contractor Relations(1)	4	3	3	3	15	2	3	3	25	2
Supervisors (For e-f above)	6	4	4	4	20	3	6	5	45	4
Total Manual Payment Related	41	29	30	32	196	22	48	40	315	25
Total CF Less Travel and Payroll	142	100	95	100	909	100	119	100	1265	100

Notes:

1. More Contractor Relations effort is due to manual payment than API, therefore the people doing this work are prorated appropriately.
2. 'Other' includes Disbursing, Technical Support, Accounting, Secretaries and, for DFC, Administration.

APPENDIX B

MAAPR Messages That Cause Manual Payment of Invoices

	MESSAGE	ATLANTA	%	BOSTON	%	CHICAGO	%	CLEVELAND	%	DALLAS	%	LOS ANGELES	%	NEW YORK	%	PHILA.	%	ST. LOUIS	%	DLA TOTALS	%
	MAAPR-INV $ NOT EQUAL	548	30.6	677	26.8	465	36.9	520	30.5	628	31.5	1286	30.4	383	31.7	889	27.2	442	26.9	5838	29.8
C	EVIDENCE OF SHIPMENT REQUIRED	169	9.5	322	12.7	106	8.4	177	10.4	307	15.4	532	12.6	276	22.8	365	11.2	229	13.9	2483	12.7
	MANDATORY REVIEW/OTHER	198	11.1	103	4.1	169	13.4	210	12.3	315	15.8	543	12.8	189	15.6	209	6.4	338	20.6	2274	11.6
	SPECIAL '9 ' ACRN	175	9.8	263	10.4	76	6.0	83	4.9	95	4.8	460	10.9	85	7.0	427	13.1	197	12.0	1861	9.5
	EXCEEDS BVN LIMIT	150	8.4	287	11.4	16	1.3	49	2.9	139	7.0	324	7.7	25	2.1	776	23.8	67	4.1	1833	9.3
	CLR/WIP BALANCE	97	5.4	257	10.2	110	8.7	291	17.1	100	5.0	210	5.0	68	5.6	53	1.6	112	6.8	1298	6.6
C	WITHHOLD	9	0.5	82	3.2	1	0.1	93	5.5	59	3.0	324	7.7	179	14.8	283	8.7	211	12.9	1241	6.3
	VO DEDUCTION PENDING	222	12.4	33	1.3	187	14.9	4	0.2	56	2.8	84	2.0	9	0.7	134	4.1	28	1.7	757	3.9
C	FIRST ARTICLE APPROVAL REQD	128	7.2	33	1.3	80	6.4	35	2.1	71	3.6	146	3.5	52	4.3	105	3.2	50	3.0	700	3.6
	CLR/ACRN BALANCE	39	2.2	70	2.8	33	2.6	64	3.8	71	3.6	186	4.4	111	9.2	83	2.5	32	1.9	689	3.5
C	FOB ORIGIN/MINIMUM SIZE	53	3.0	168	6.6	13	1.0	62	3.6	66	3.3	177	4.2	6	0.5	22	0.7	62	3.8	629	3.2
	TRANS NOT AUTH - REVIEW CHARGE	43	2.4	33	1.3	24	1.9	41	2.4	98	4.9	233	5.5	47	3.9	39	1.2	34	2.1	592	3.0
	BVN CONTAINS MULTI-SERV FUNDS	37	2.1	77	3.0	6	0.5	78	4.6	59	3.0	107	2.5	6	0.5	177	5.4	35	2.1	582	3.0
	AWAITING HARD COPY RECEIPT	38	2.1	26	1.0	84	6.7	29	1.7	37	1.9	199	4.7	8	0.7	85	2.6	45	2.7	551	2.8
	FAC 4	100	5.6	26	1.0	12	1.0	68	4.0	27	1.4	86	2.0	54	4.5	131	4.0	36	2.2	540	2.8
	CERTIFICATION REQD/AFO			463	18.3					2	0.1	2	0.0					9	0.5	476	2.4
	TRANS NOT AUTH	34	1.9	83	3.3	7	0.6	21	1.2	29	1.5	117	2.8	62	5.1	67	2.1	23	1.4	443	2.3
C	LIQUIDATED DAMAGES AUTH	36	2.0	18	0.7	44	3.5	27	1.6	22	1.1	37	0.9	2	0.2	75	2.3			261	1.3
	BVN CONTAINS FMS	23	1.3	36	1.4	5	0.4	4	0.2	15	0.8	25	0.6	5	0.4	132	4.0	10	0.6	255	1.3
	CONTRACTOR INDEBTEDNESS	68	3.8	8	0.3			6	0.4	3	0.2	119	2.8					2	0.1	206	1.0
C	GUARANTEED MAXIMUM SHIPPING WT	23	1.3	36	1.4	5	0.4	25	1.5	32	1.6	48	1.1	3	0.2	13	0.4	20	1.2	205	1.0
C	PATENT/ROYALTY CLAUSE	42	2.3	13	0.5	18	1.4	7	0.4	10	0.5	56	1.3	4	0.3	41	1.3	2	0.1	193	1.0
	FUND LIMITATION							32	1.9	3	0.2					31	0.9	109	6.6	175	0.9
	INV/MAAPR AMT ZERO	16	0.9	21	0.8	19	1.5			7	0.4	3	0.1			105	3.2			171	0.9
	EXCEEDS BVN ULO	6	0.3	14	0.6	1	0.1	2	0.1	10	0.5	38	0.9	2	0.2	87	2.7	5	0.3	165	0.8
C	CARGO PREFERENCE ACT	24	1.3	60	2.4	1	0.1	22	1.3	2	0.1	26	0.6	5	0.4	5	0.2	12	0.7	157	0.8
C	IBOP							122	7.2	13	0.7	1	0.0							136	0.7
C	SPECIAL TOOLING CHARGES AUTH	9	0.5	6	0.2	6	0.5	5	0.3	4	0.2	51	1.2	12	1.0	15	0.5	17	1.0	125	0.6
	MULTI-SERVICE RECOUPMENT			4	0.2	5	0.4	105	6.2	6	0.3	1	0.0			2	0.1	1	0.1	124	0.6
C	CERTIFICATION REQD/AUDITOR			19	0.8	28	2.2			3	0.2	47	1.1	2	0.2	23	0.7	1	0.1	123	0.6
C	GFP APPLIES			84	3.3			4	0.2	1	0.1	15	0.4	7	0.6	1	0.0			112	0.6
	REVIEW DISCOUNT	12	0.7	9	0.4	12	1.0	5	0.3	12	0.6	11	0.3	15	1.2	27	0.8	8	0.5	111	0.6
	TRANS AMT EXCEEDED	6	0.3	20	0.8	4	0.3	11	0.6	7	0.4	20	0.5	7	0.6	7	0.2	2	0.1	84	0.4
	U/P MILS EXCEED 2 POS	5	0.3			3	0.2	9	0.5	30	1.5	11	0.3	2	0.2	14	0.4	5	0.3	79	0.4
	U/P NOT APPLICABLE	11	0.6	13	0.5	14	1.1	1	0.1	5	0.3	20	0.5	3	0.2			4	0.2	71	0.4
C	MANDATORY REVIEW/LUMBER									30	1.5	4	0.1			34	1.0			68	0.3
	U/P UNAVAILABLE	25	1.4	10	0.4	5	0.4					19	0.4	6	0.5					65	0.3
C	CERTIFICATION REQD/ACO			35	1.4			3	0.2	17	0.9	5	0.1			1	0.0	1	0.1	62	0.3
C	TRANS AUTH / REVIEW FOB PT	2	0.1	10	0.4	6	0.5	2	0.1	7	0.4	8	0.2	4	0.3			12	0.7	51	0.3
	UNDEFINITIZED 'U ' ACRN	6	0.3	1	0.0	1	0.1	24	1.4	5	0.3	3	0.1	2	0.2			1	0.1	43	0.2
C	PRICE ADJUSTMENT AUTH	1	0.1	1	0.0			22	1.3	2	0.1	1	0.0					2	0.1	29	0.1
	INSUFFICIENT CONTRACT ULO	1	0.1	9	0.4	3	0.2	1	0.1	7	0.4	2	0.0			2	0.1	2	0.1	27	0.1
	CLR/WIP BAL-NO RECOUP PERCENTS							2	0.1	1	0.1	23	0.5							26	0.1
C	MANDATORY REVIEW/STEEL					1	0.1									22	0.7			23	0.1
C	MANUAL REVIEW BY AO/ACO (CPA)	1	0.1			1	0.1	1	0.1			1	0.0			1	0.0	15	0.9	20	0.1
C	CERTIFICATION REQD/PCO											12	0.3			5	0.2			17	0.1
C	PACKAGING CHARGES AUTH			2	0.1	5	0.4					10	0.2							17	0.1
C	FOREIGN CURRENCY REQD/CTR-IBOP							16	0.9											16	0.1
C	ADVANCE PAYMENTS AUTH			2	0.1			1	0.1			2	0.0			3	0.1	3	0.2	11	0.1
	INSUFF ULO FOR COUNTRY CODE	1	0.1	2	0.1					1	0.1	3	0.1					1	0.1	8	0.0
C	CERTIFICATION REQD/CONTRACTORS											5	0.1							5	0.0
C	GFM APPLIES	1	0.1					1	0.1			1	0.0	1	0.1					4	0.0
C	FGN CURRENCY REQD/INV-CTR-IBOP							2	0.1											2	0.0
	POTENTIAL ACCOUNTS RECEIVABLE															1	0.0			1	0.0
	TOTAL # OF MAAPR MESSAGES *	2359		3436		1576		2287		2414		5644		1642		4492		2185		26035	
	TOTAL # OF MANUAL MAAPRs	1788		2528		1259		1704		1993		4231		1203		3267		1642		19620	

NOTE: The percentages are calculated as the # of times the message occurs on a MAAPR. It is the # of messages divided by the # of MAAPRs (NOT the total # of messages).
* Since there can be more than one message on a MAAPR, these totals will be greater than the number of MAAPRs.
"C" before the MAAPR message indicates the presence of a contract clause.

APPENDIX C

Cost of a Manual Payment

A. Methodology. The methodology for determining the additional cost of a manual pay, above the cost of the work that is associated with both manual and automated pays, is:

1. Find data for the # of workers doing manual pays and the # of manual pays in a year.

2. Calculate:

$$\text{\# of Manual Pays Per Worker Per Day} = \frac{\text{\# of Manual Pays Per Year}}{\text{\# of Workers Doing Manual Pays X 260}}$$

3. Calculate:

$$\text{Additional Cost Per Manual Pay} = \frac{\text{Cost Per Manual Pay Worker Per Day}}{\text{\# of Manual Pays Per Worker Per Day}}$$

B. Calculations

1. Data

a. The Effective Number of DFC and DCMC Employees Working Only on Manual Payments

(1) Total DFC and DCMC personnel in the Accounting and Finance Division (CF) was 2,579 at the end of FY 90. (On-board personnel from organization charts of payment centers.) This does not include any Los Angeles or New York personnel except for 10 in international payment in New York.

(2) Total CF employees must be reduced by the number of employees in Payroll and Travel. They do not work on contract payment processing. This area is 10.5 percent of CF or 270 people. This leaves 2,309 employees.

(3) Of the 2,309 employees who work on contract payment processing, 1,732, (75 percent) do keypunch-input of invoices and contracts, filing, reconciliation, etc. (See Appendix A.) These tasks, and some others, are performed for all pays (or contracts) regardless of whether the pay is manual or through the API System. This manual work therefore is more properly attributed to the API System. Therefore the workyears are removed from the calculation of the work done on manual pays. This leaves 577 (25 percent).

b. Number of Manual Pays Per Year. Total DCMC FY 90 invoices processed is 1,598,506 (report RCS 448). The API rate is 50 percent, so half of these, (799,253) were manual pays.

2. Manual Pays Per Worker Per Day. There are 1,385 manual payments per year per person working on manual payments (799,253/577). There are 260 paid days in a year (5 X 52 weeks). Therefore there are 5.327 manual pays per paid day per person doing manual pays. This figure is for all paid days (see note below), therefore holiday, annual, sick leave and training is accounted for.

3. Additional Cost Per Manual Pay. The additional cost of a manual pay (above the manual part of the API work) is:

		fringe ben. adjustment		
GS 6 St. 5 $10.27/hr.	X	1.2955	X	8 hours = $106.44 per paid day

$$\frac{\$106.44/\text{day}}{5.327 \text{ manual pays/day}} = \$19.98 \text{ per manual pay}$$

NOTE: Paid days can be converted to work days by using a 22 percent adjustment factor to account for leave (18 percent) and training (4 percent). Therefore 260 paid days equate to 213 work days. 6.50 manual pays per person are done on work days. (The cost, of course, is the same.)

APPENDIX D

MAAPR-INV $ NOT EQUAL

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I. INTRODUCTION. A detailed frequency breakdown of all manual Material Acceptance and Accounts Payable Report (MAAPR) messages by payment center is in Appendix B. The ten most frequent messages are shown in Attachment 1 to this Appendix. Table 1 contains the overall breakdown of messages in the sample.

TABLE 1

Cause of Manual MAAPR Message	Estimated % Occurrence	
MAAPR - Invoice $ Amount Not Equal:		
Contractor Invoices for Less than MAAPR:	10	
Contractor Invoices for More than MAAPR:		
Modification Receipt-Timing and/or Transportation Charge Related (1)	12	
Other	8	
Subtotal		30
Other non-clause Related:		37
Contract Clause Related:		
4 Clauses Cause (2)	26	
19 Clauses (Each Less Than 1.3%) Cause	7	
Subtotal		33
Total		100

Notes:

1. Transportation charges on Commercial Bills of Lading (CBLs) are authorized. The contractor has properly included the charge in the bottom line invoice amount. However, the itemized CBL charge was not separately input into the Mechanization of Contract Administration Services (MOCAS) system. This may occur either because the CBL charge was not itemized by the contractor, or if itemized, was overlooked and not input. As a result, the invoice exceeds the MAAPR by the amount of the transportation charge.

2. The four clause related messages are: EVIDENCE OF SHIPMENT REQUIRED, WITHHOLD, FIRST ARTICLE APPROVAL REQUIRED, and FOB ORIGIN/MINIMUM SIZE.

This table shows that one message (MAAPR-INV $ NOT EQUAL) occurred on 30 percent of all the MAAPRs in the sample. This message was studied first because the potential payback, due to the frequency of occurrence, was considered high. The results of studying the MAAPR-INV $ NOT EQUAL message is in two parts. Paragraph II analyzes invoices less than the MAAPR amount and paragraph III analyzes invoices that are for more.

II. CONTRACTOR INVOICES FOR LESS THAN MAAPR AMOUNT

A. Analysis. A manual MAAPR is generated if the contractor's invoice and the corresponding amount in the Mechanization of Contract Administration Services (MOCAS) system are not equal. The only exception is if the difference is less than $10 AND the invoice is less than the amount authorized in MOCAS. Such invoices are paid automatically by the Automatic Payment of Invoices (API) System. The $10 threshold was implemented to account for small rounding errors resulting from extension of unit prices.

If the contractor submits an invoice that is more than $10 below the corresponding amount authorized in the contract, a manual pay is generated. The payment clerk pulls the hard copy contract, verifies the data base (DB), corrects the DB if required, and then manually pays the invoice amount. If the invoice is less, and the DB is correct, the payment clerk still pays only the invoice amount. The payment clerk does not notify the contractor that the invoice amount is less than the authorized amount.

B. Alternatives. Three alternatives were considered: (1) change the system to allow for more expeditious processing of these payments, (2) change the threshold to a higher amount ($25, $100 etc.), and (3) eliminate the $10 threshold and pay any invoice less than the authorized amount.

1. Change the way these payments are handled. Alternatives for such changes, that seemed to show promise, would require significant programming work. The most promising alternative would be to divert these invoices, and review them in batches, for just this condition. A manual listing could be generated for a single payment clerk to review. Each item on the list could then in some way be verified and then released to the API system. Some economies could be realized by having a dedicated clerk researching this single message. The documentation associated with the manual pay could be avoided. Unfortunately, this would be too big a process and programming change to be realistically completed in the near term. And the returns would be limited.

2. Change the dollar amount of the threshold. This does not appear to be a worthwhile option. Raising the threshold to $50 would have only eliminated 111 manual payments in our sample. A $100 threshold would have eliminated 218 manual payments. Further increasing the threshold raises questions as to whether the threshold, at any level, has merit.

3. Remove the threshold. Close analysis of the risk involved shows this option to be viable and cost effective. Removing the threshold could reduce manual payments by about 6 percent based on our sample. (Several MAAPR messages that can cause manual pay could appear on the same MAAPR. However, the MAAPR-INV $ NOT EQUAL message, when the invoice is LESS than the MAAPR amount, appeared alone 1,143 times.)

This represents a potential savings of $0.94 million per year. (The incremental cost, the difference between paying API versus manually averages $19.98 per pay. See Appendix C for calculations. There would be about 46,000 manual payments averted annually.)

C. Analysis of Objections or Possible Risks. In order to assess the possible risks of removing the threshold, several experts on the MOCAS system were interviewed at Defense Contract Management District North Central (DCMDC-C), Defense Logistics Agency Programs Standards Support Office (DPSSO), DLA Finance Office (DLA-CF), and the DLA Finance Center (DFC). They identified several possible risks:

1. Contract Amount Incorrectly Keypunched

Objection or Possible Risk: If the contract amount was incorrectly keypunched, so that the dollar value was too high (e.g., an extra zero was input) AND the contractor submitted an invoice higher than authorized but less than the amount of the keypunch error, the contractor could be overpaid under the proposed change.

Evaluation: At the contract closeout reconciliation, this condition would result in an audit and a collection action. (Under the present system the input error would be corrected and the contractor would be paid the proper amount.)

2. Invoice Amount Incorrectly Keypunched

Objection or Possible Risk: The payment center could keypunch the invoice amount improperly at an amount less than the MAAPR amount. Also, contractors could invoice for less if they include their discount in the "bottom line" invoice amount (although they are not supposed to do this.) Under the proposed change both situations would pay contractors less than they are entitled. This could result in interest payments by DLA. It would also result in additional billing by the contractor and another manual pay.

Evaluation: As mentioned above, dramatic payoff is possible from handling all pays for this MAAPR automatically. Therefore, if it is necessary to eliminate this particular type of keypunch error to automate these pays, action should be taken to do so. (True keypunch errors of this type are fairly rare.) To eliminate the problem, a screening capability should be incorporated into the invoice input system to test for keypunch error simultaneously with the initial keypunching input of the invoice. If after initial input the amount is different, either more or less than the MAAPR amount, the screen should give a clear message that there is a mismatch. The payment clerk would then be instructed to recheck the invoice amount. This kind of verification is highly effective and involves virtually no extra work. It "corrects" errors by preventing them.

3. Modification Lowered Contract Price

Objection or Possible Risk: Problems could also arise if a modification was made to the contract which lowered the unit price and that modification was not entered into MOCAS prior to processing the invoice. In this case, if the contractor submitted the invoice using the higher (original contract) unit price, an overpayment could result.

Evaluation: At the contract closeout reconciliation, this would result in an audit and collection action. If the payment office does not have a hard copy of the modification, this would also happen with the current system. (Paragraph V B 2 of this Appendix recommends a change that would also solve this problem.)

4. Contract Payment Reconciliation Work

Objection or Possible Risk: All contracts must be reconciled before closeout. By eliminating the $10 threshold, the reconciliation may be more involved.

Evaluation: This would happen only in those relatively few cases where a keypunch, or contract modification type error actually did result in too high a value in the DB. In other words, in most cases the error does not exist, there is no change to the DB, and reconciliation would be the same as with the present system.

5. Contractors Will Not Invoice Accurately

Objection or Possible Risk: Contractors will not have incentive to complete invoice documents properly and accurately if they know the payment center will pay when a discrepancy exists. As a result, reconciliation workload will rise. Reconciliation will be more difficult.

Evaluation: There is no apparent incentive that would cause a contractor to deliberately invoice for less. The contractor will always want the full amount that is due. As a result there should be no additional reconciliations. (One exception is the possibility that a modification has decreased the contract amount.) Some of the discrepancies between the MAAPR and invoice dollar amounts should be discovered by contractors after they invoice. If so, they will invoice for the differential and there would not be added work during reconciliation.

Information showing that the contractor invoiced for less than the MAAPR amount is included on the manual Form 477, Advice of Payment. When there is a manual payment this form is part of the reconciliation documentation and helps with that process. The subvoucher, invoice, MAAPR and other supporting documents are also part of reconciliation documentation. When payment is API, there is no manual Form 477 with the other reconciliation documentation. However, there is no significant difference, in work time, for the reconciliation process

when there is a manual Form 477 versus when there is not. DPSSO estimates the time to do a reconciliation at 18 minutes and the added time when there is no manual Form 477 at 1-2 minutes. As a result, the benefits of paying these invoices API (since all other considerations will enable such payment) far outweigh the relatively small added cost in reconciliation.

D. Conclusion. There is no benefit to checking MOCAS for contract input errors when the contractor invoices for more than $10 below the corresponding MOCAS amount. This is because there is very little risk to paying such invoices. After all, we are obligated to, and do, pay the lesser amount anyway.

The limited risk is due to the possibility that an amount could be incorrectly keypunched into MOCAS that is less than that on the invoice. This error could be eliminated by comparing the input amount to the MOCAS amount on-line and providing an on-screen alert for discrepancies.

The associated manual pays consume 34 workyears costing $0.94 million per year.

III. CONTRACTOR INVOICES FOR MORE THAN MAAPR AMOUNT

A. Analysis. The MAAPR-INV $ NOT EQUAL message, when the contractor invoices for more than the MAAPR, is about 20 percent of all MAAPR messages that cause manual payments. We estimate that half of these occur because contract modifications are not received in a timely manner. This can happen when an increase modification for a new amount has been implemented. That is, if the contractor invoices for the new, correct amount before the payment center receives a hard copy of the modification from the buying command, or inputs it to MOCAS, a manual pay results.

Of the remaining half of these messages, about 50 percent are estimated to be due to overlooking to input a CBL transportation charge into MOCAS.

If the invoice is for more than the amount in the DB, a manual payment is always generated. Obviously this avoids overpaying the contractor. It also prevents the payment center from exceeding the buying activity's obligation authority.

To solve the modification receipt-timing problem, get the contract modification to the payment center on a timely basis at about the time the buying command creates the modification.

The transportation charge difficulty can be partly resolved by system changes that will prompt the input clerk to look for an itemized CBL charge when it is authorized. As a result, CBL charges that would have otherwise been overlooked, would instead be input, and would not

trigger manual pays. Those invoices having CBL charges authorized and included, but not itemized by the contractor, will still cause manual pays.

B. Alternatives

1. For modification receipt-timing problem. Getting the modification to the payment center rapidly means doing it electronically. There are two approaches for electronic transmission. Military Standard Contract Administration Procedures (MILSCAP) Contract Abstracts could be enhanced, or other automated contracting systems could be built or enhanced.

a. MILSCAP. There are problems with MILSCAP (See discussion in Appendix J), but there could be less new development work. MILSCAP was designed to support Contract Management and Quality Assurance, not the payment function.

(1) Changes since the early 1980's provide a new groundwork for enabling payment prior to receipt of contract modification hard copy.

(a) Some contract provisions previously were not abstracted (some of these may still not be):

[1] Objection or Possible Risk: Indicator of Evidence of Shipment (EOS) clause is not in abstract.

Evaluation: While the EOS clause is not directly included in MILSCAP contract abstract data, its applicability can be derived from that data. When the material is accepted at source, but the Free on Board (FOB) point is at destination, Federal Acquisition Regulation (FAR) 52.247-48 states that the EOS clause applies. Both the FOB point and the acceptance point are included in the MILSCAP abstract. A computerized check on these two data elements could be done when an abstract transmission is received. The EOS data element would then be set accordingly in the data base.

This proposed procedure assumes that the Procuring Contracting Officer (PCO) properly includes this clause when it applies. If the PCO does not include the clause when it should have been included, and the contractor does not provide evidence of shipment, API would stop. However, these cases could be easily handled by checking the hard copy contract and removing the EOS flag. Such occurrences should be very infrequent.

[2] Objection or Possible Risk: Indicator of Certification of Invoice Required - Administrative Contracting Officer (ACO), Procuring Contracting Officer (PCO), U.S. Department of Agriculture (USDA), Auditor or Contractor is not in abstract.

Evaluation: The Certification Required/ACO and PCO messages are input when the contract provides for them. However, these messages occur very infrequently (about one out of every 300 MAAPRs has one or the other). ACOs and PCOs may be using this message when they want the contract reviewed for a reason that is not listed. Two data elements, each one character in length, could be added to the MILSCAP list of Special Contract Provisions.

Certification Required/Auditor is applicable to cost contracts and is input at time of contract input. These invoices must be certified by the Defense Contract Audit Agency (DCAA). However, the message originates when the contract is cost type, and the contract type indicator is in the abstract.

Certification of Invoice Required/USDA is infrequent. It did not occur once in 19,620 MAAPRs in the sample. None of the personnel interviewed had ever seen the message. Certification of Invoice Required/Contractor occurred only 4 times in the sample. However, there should be no reason why a contractor should have to certify his own invoice. (Were the occurrences input errors?) Unless there is a strong reason, this message should be eliminated from MOCAS. If there is a valid, but very rare, condition it could be covered by Mandatory Review Other and the remarks field. This might be the way it would have been handled anyway, if it did actually arise.

[3] Objection or Possible Risk: Indicator of Mandatory Review Required - Government Furnished Material, Government Furnished Property, Lumber, Steel or Textile is not in the abstract.

Evaluation: Together these messages occur infrequently, once in every 95 MAAPR reports. MANDATORY REVIEW/TEXTILE did not appear at all. Mandatory reviews should be handled the same way as certifications of invoices. In other words, mandatory reviews for lumber, textile, and steel should be added to the MILSCAP list of Special Contract Provisions.

(b) Objection or Possible Risk: There is a five clause limit on the MILSCAP abstract Special Contract Provisions field. As a result a number of clauses in the contract might be left out of MILSCAP.

Evaluation: There are currently 16 special contract provisions in a MILSCAP contract abstract (MILSCAP Manual, Appendix A11). However, a limit of 5 can be in an abstract. Obviously, many contracts have more than 5 provisions. The Defense Logistics Standard Systems Office (DLSSO) is responsible for the Modernization of Defense Logistics Systems (MODELS) project. MODELS will provide a translator for the military standardization systems: Military Standard Requisitioning and Issue Procedure (MILSTRIP), Military Standard Transportation and Movement Procedure (MILSTAMP), and Military Standard Transaction Reporting and Accounting Procedure (MILSTRAP), as well as MILSCAP. Transmissions from these systems will be converted from fixed length

records to variable length records and vice versa. This translator is complete and is in the testing stage at the Logistics Management Institute (LMI).

As a result, the limit of five special contract provisions per abstract will be eliminated. It will be possible to include all provisions.

(c) Objection or Possible Risk: The remittance address (if different from the bid/offer address), progress payment rates and progress payment liquidation rates, could be missing from both the MILSCAP contract and contract modification abstracts.

Evaluation: The MILSCAP contract abstract has space for a remittance address that is different from the bid/offer address. The space is not used. DLA chose not to use it. It could be used for the purpose mentioned above, which was probably the original intent. If the remittance address changes, a MILSCAP modification could be used to implement the change.

Data on progress payment rates and progress payment liquidation rates, could be added to MILSCAP transmissions.

(2) Concerns still remain:

(a) Objection or Possible Risk: The modification does not identify the clauses in the contract.

Evaluation: The clauses are in MOCAS. If clauses need to be added or deleted, MILSCAP can do it. In some situations the changes or enhancements mentioned above are necessary to do this. If changes regarding information within clauses (such as First Article due date or Liquidated Damages rate changes) are necessary, MILSCAP can transmit the data.

(b) Objection or Possible Risk: Better validation is needed. Payment centers can receive MILSCAP contracts that are not signed.

Evaluation: A single character data element could be added to the MILSCAP contract abstract to confirm the presence of a signature on the original contract hard copy. This will help the buying activity assure that only modifications with signatures are transmitted.

(c) Objection or Possible Risk: Better quality data is needed.

Evaluation: MILSCAP is widely known to have an error rate that is high compared to a level that would be acceptable for input to the payment process. The data is bad because no one uses it, and no one uses it because the data is bad. Decision makers have 15 years of bad experience with MILSCAP upon which they are basing judgments not to use it.

However, getting usable data for payment from a contracting DB is doable. The (Standard Automated Materiel Management System) SAMMS/MOCAS Standard Interface, which will use electronic transmissions without hard copy, is being made to work by having SAMMS include all the elements MOCAS needs to pay.

(3) MILSCAP Status. Only the Army currently uses MILSCAP to transmit complete contract abstracts and modification abstracts. DLA, the Navy, and the Air Force now transmit only partial MILSCAP abstracts of original contracts. This is partly a result of deviations to MILSCAP having been granted. Also they transmit very few modifications via MILSCAP. Each of these organizations has systems development work underway that will transmit information, identifying clauses included in the original contract, and modification information. These efforts are scheduled for completion as follows:

(a) Contracting Improvements (DLA-DSAC) - 9/91. This target date has remained the same for the past 3 years.

(b) Inventory Control Point (ICP) Resystemization (Navy) - 3/92. This will allow both the Aviation Supply Office and Ships Parts Control Center to transmit MILSCAP documents.

(c) Contract Data Management System (Air Force) - FY 95. The Air Force Systems Command (AFSC) uses complete MILSCAP abstracts. The Air Force Logistics Command (AFLC) does not. The project completion date has been slipping. The effort may become a target for budget cutbacks.

b. Other Automated Contracting Systems. Another alternative is developing new systems or modifying existing systems. However, the cost would be high, it would probably take much longer to complete, and the probability of not successfully completing such efforts would be high compared to enhancing MILSCAP.

2. For transportation charge input problem. Verifying whether or not the invoice should have an itemized CBL transportation charge means checking it against the MOCAS DB. A screening capability, similar to the one proposed for comparing the MAAPR amount with the invoice amount, should be incorporated into the invoice input system. It would test for keypunch error (omitting the CBL charge line item) simultaneously with the initial keypunching input of the invoice. If after initial input a CBL charge was not input, and transportation charges were authorized by the contract, the screen would give a message to recheck the invoice for the CBL line item, and input it if it is there. Such verification avoids errors. The onetime cost of changing MOCAS to do this is estimated to be $2,500.

C. Conclusion

1. Making MILSCAP abstracts adequate for payment will have high payoff. And this alternative could be available soon. To modify MILSCAP, to make the contract modification abstracts adequate for payment, DLA would have to work jointly with the Services. DLA is not now doing this.

To take advantage of MILSCAP technology, the requirement for hard copy of modifications must be eliminated. The requirement for hard copy has been justified by the previous inadequacy of MILSCAP. Implementation of the SAMMS/MOCAS standard interface will eliminate the requirement for hard copy on both contract award and modification. This will set a precedent to eliminate requiring hard copy documents for payment. Unless hard copy requirements are eliminated, where justified, it will never be possible to truly take advantage of communications and EDI technological advances.

With timely receipt of information there would be significantly fewer invoices for more than the MAAPR amount. Twenty percent of all MAAPR messages are MAAPR-INV $ NOT EQUAL with the contractor invoicing for more. We estimate half of these (10 percent), are due to the modification not being received at the payment center in time. As a result, manual payments would be cut by 4.2 percent. The figure is only 4.2 percent because invoices often trigger more than one MAAPR message. The potential savings would be 24 payment clerk workyears. This is equivalent to $0.67 million per year, including fringe benefits, after DLA begins receiving modifications electronically. In addition, electronic receipt of modification information would eliminate the need for manual input. DLA payment centers devote 185 workyears to inputting contract data. The savings in this area would be the 52 percent that, on average, involve modifications. This amounts to 96 input clerk workyears equivalent to an additional $2.4 million per year. (See Attachments 2 and 3 to this Appendix for details.)

2. Enhancing MOCAS so that input clerks can check, on-line, whether an invoice should have an itemized CBL will have excellent payoff. Forty six percent of the invoices over the MAAPR amount have CBL charges authorized. Fifty five percent of these (25.3 percent of those above the MAAPR) are estimated to be due to payment clerks overlooking to input a properly itemized CBL. (The other 45 percent either do not have transportation charges or are due to the contractor failing to itemize the CBL. These will continue to be manual pays.) Fifty six percent of the MAAPR-INV $ NOT EQUAL messages due to this condition appear alone. As a result 8 workyears would be saved. (See Attachments 2 and 3 to this Appendix for details.)

3. Manual MAAPRs (when the invoice amount is more than the MAAPR amount) that have both the modification receipt-timing and CBL

charge oversight conditions, but only these conditions, will also be eliminated. As a result an additional 8 workyears would be saved. (See Attachments 2 and 3 to this Appendix for details.)

IV. OVERALL CONCLUSIONS

A. Estimated Savings:

Area	Work-years	Compensation Incl Benefits ($ millions)
Savings from Cutting Manual Pays:		
Invoice Less than MAAPR Amount-Payment clerks	34	0.94
Invoice More than MAAPR Amount-Payment clerks		
Mod receipt-timing related	24	0.67
CBL charge overlooked	8	0.22
Mod receipt-timing & CBL related	8	0.22
Savings from Cutting Input Effort:		
Input clerks (GS-5, Step 5)	96	2.39
Total	170	4.44

See details in Attachment 3 to this Appendix. Savings of 170 workyears is about 7.4 percent of the payment processing workforce (not including Payroll & Travel). It can be achieved by:

1. automatically processing invoices less than the MAAPR amount,

2. automatically inputting contract modifications using MILSCAP, and

3. checking, on-line, for the presence of an itemized CBL charge when such charges are authorized.

Since MAAPR reports can have more than one message causing a manual pay, additional savings from this change will be realized if the frequency of other MAAPR messages is reduced.

B. Changing MILSCAP could also enable electronic input of original (vs. modification) contract information. This would save an additional 89 workyears for a total savings of 259 workyears.

C. The time has come for timely, electronic receipt of modification information usable for payment. There are no longer any really good reasons not to transmit contract information required for payment electronically using MILSCAP.

V. RECOMMENDATIONS

A. Contractor Invoices for Less than MAAPR Amount:

1. Change MOCAS so that the keypunched invoice amount can be compared, on-line, to the MAAPR amount. (In this case the contractor is really invoicing for the correct amount but it was incorrectly keypunched as less.) This change, if necessary, would be incorporated into MOCAS with the Contract Payment and Reporting (CPR) System that DLA Systems Automation Center (DSAC) is now working on. The change is significant, as it will allow on-line access to the DB. This will require substantial programming effort. However, if this is the only significant objection to paying API when the contractor invoices for less than the MAAPR, then the systems change should be done separately, now, rather than waiting further for CPR, even if the effort is partly duplicated. This is because all of the payoff from using API, when contractors invoice for less, will be lost without it. Furthermore, research shows that no significant work will be added to the reconciliation process. There will be no difference in the number of contracts to be reconciled.

2. Change MOCAS so that if the contractor invoices for less than the corresponding MOCAS amount, the invoice is paid automatically (API) rather than manually.

The payoff for these changes is $0.94 million per year.

B. Contractor Invoices for More than MAAPR Amount:

1. Modify MOCAS so that input clerks can easily check if an invoice should have an itemized CBL by providing an on-screen message that shows when CBL charges are authorized. The payback ratio for this is very large because the onetime cost of the systems change is only $2,500.

2. Make MILSCAP contract and modification abstracts suitable for payment. Provide DLA input to DoD MILSCAP enhancement efforts.

a. Initiate a single DLA effort to see that the Navy and Air Force MILSCAP development efforts continue expeditiously and are successfully completed. See that they add all information needed for payment and data validation. This data is identified in paragraph III B 1 a above. The enhancement, involving adding elements, and using MODELS is straightforward.

b. Request an Army systems development effort to upgrade MILSCAP contract and contract modification abstract data so that it can be used for payment.

3. Promote to DLA and Armed Services management, the important benefits that would result from successful development of the capability to electronically transmit modifications. Justify the

appropriate project priority. Getting the Services to successfully complete this specific programming task, especially the Air Force, means saving 96 workyears in the payment centers. If original contract information can also be transmitted and used, it means nearly double that amount.

4. Eliminate the hard copy requirement for payment on modifications.

C. For all Contracts: Change MILSCAP to enable electronic input of original (vs. modification) contract information.

Attachment 1

Percentage of Time MAAPR Message Appears On A MAAPR Report
(That Causes A Manual Pay)
(Based on 2 Week Sample of All DCMC Manual Pays)

		Percent
1.	MAAPR-INV $ NOT EQUAL	29.8
2.	EVIDENCE OF SHIPMENT REQUIRED	12.7
3.	MANDATORY REVIEW/OTHER	11.6
4.	SPECIAL '9' ACRN	9.5
5.	EXCEEDS BVN LIMIT	9.3
6.	CLR/WIP BALANCE	6.6
7.	WITHHOLD	6.3
8.	VO DEDUCTION PENDING	3.9
9.	FIRST ARTICLE APPROVAL REQUIRED	3.6
10.	CLR/ACRN BALANCE	3.5
--	44 Other Messages Make Up the Rest	*

* Should not total 100 percent - Percentages are of times message is on a report

1. $ on the MAAPR and invoice are not equal (except if MAAPR amount is greater than the invoice by $10 or less - in which case invoice is paid automatically).

2. Evidence of Shipment (EOS) Required clause is in contract - but EOS is not provided with invoice.

3. DCMC flags contract for manual review for various reasons. Also established automatically (for Awaiting Hard Copy) when MILSCAP abstract is received in MOCAS.

4. MAAPR contains line items for which there are multiple Accounting Classification Reference Numbers (ACRN).

5. Bureau Voucher Notice invoice (cost type contracts) after payment, would exceed 85 percent of obligated amount.

6. Insufficient funds on Contingent Liability Report (CLR) for Work in Progress.

7. Withholding Charges clause in contract.

8. Credit memo or Accounts Receivable Record exists on Invoice File.

9. First Article clause in contract and First Article Test has not yet been completed.

10. Insufficient funds for payment exist at the ACRN level on the CLR. Also occurs when the whole dollar discount amount is equal to or greater than the invoice amount.

Attachment 2

Percent Occurrence of Causes of MAAPR INV $ NOT EQUAL Message When Invoice is Above MAAPR Amount

Percent of all manual messages that the MAAPR is: MAAPR INV $ NOT EQUAL Message and the invoice is above the MAAPR amount (1) = 20.1%

Percent cause is mod receipt-timing problem out of the 'NOT EQUAL' messages that are above the MAAPR amount (2) = 50%

Percent cause is overlooking to input a CBL transportation charge itemized on the invoice out of the 'NOT EQUAL' messages that are above the MAAPR amount (1) = 25.3%

Probability that no other manual messages appear when either of these two conditions exist (1) = 56.2%

Notes:
1. Estimated from sample.
2. Estimated by payment personnel.

A. The percent of time that a manual MAAPR is caused by either a timing problem or a CBL transportation charge problem, or both, is calculated from the 4 probabilities above as follows:

20.1% X 56.2% X (1 - (1 - 0.5)(1 - 0.253)) = 7.08%

The notation (1 - 0.5) is the probability (50 percent) that the message is NOT the result of a timing problem and (1 - 0.253) is the probability (74.7 percent) that it is NOT a problem of overlooking a line item CBL transportation charge.

This 7.08 percent is made-up as follows:

1. The percent of time that the message is caused ONLY by a modification receipt-timing problem is:

20.1% X 56.2% X 50% X (1 - 0.253) = 4.22%

2. The percent of time that the message is caused ONLY by a CBL transportation charge problem is:

20.1% X 56.2% X 25.3% X (1 - 0.5) = 1.43%

3. The percent of time that the message is caused by BOTH problems is:

20.1% X 56.2% X 50% X 25.3% = 1.43%

B. The percent of time that the message is caused by NEITHER problem (other problems cause the message) is:

20.1% X 56.2% X (1 - 0.5)(1 - 0.253) = 4.22%

C. The percentages in A and B above total 11.3 percent. The remaining 8.7 percent of the 20 percent of the manual messages (that occur when the invoice is more than the MAAPR) have another manual payment message in addition to one or both of the conditions considered here.

Attachment 3

Estimated Savings

Cause of Manual Pay	Percent Occurrence	Savings Work-years(1)	Savings Dollars Millions
Invoice Less Than MAAPR(2)	5.83	34	0.94
Mod Receipt-Timing(2)	4.22	24	0.67
Overlook CBL Charge(2)	1.43	8	0.22
Mod Receipt-Timing & Overlook CBL Charge	1.43	8	0.22
	12.91	74	2.05

Notes:
1. There are 577 manual pay workyears.
2. MAAPR reports where the message appears alone and is the sole cause of the manual pay.

Contract data input is 185 workyears- 8% of 2,309.

52%- 96 workyears is for contract modifications
48%- 89 workyears is for original contracts

Total savings: 74 + 96 = 170

$\frac{170}{2,309}$ = 7.4% of payment processing workforce, not including Payroll & Travel.

APPENDIX E

EVIDENCE OF SHIPMENT REQUIRED

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I. INTRODUCTION

When the Free On Board (FOB) point is at Destination, but Inspection and Acceptance are both at Origin, the contracting officer inserts Federal Acquisition Regulation (FAR) clause 52.247-48 in the contract. This clause requires that specified Evidence of Shipment (EOS) be furnished in support of the contractor's invoice. Defense Logisitics Agency Manual (DLAM) 7000.5, Contract Administration Services Accounting Procedures, Part 7, Chapter 1, requires that DLA pay these invoices only after receipt of the proper EOS. Since payment can be made once the material is inspected and accepted, this clause is designed to prevent DLA from paying invoices for material that has not been shipped.

When EOS is not furnished as required, the invoice is handled manually, until the EOS is received. Depending on the circumstances, after the EOS is furnished the invoice is recycled or reinput as a new invoice. It is then paid using the Automatic Payment of Invoices (API) system. Therefore, manually handling an invoice that lacks EOS is not a true manual payment. It does not require the completion of DLA Form 477, Advice of Payment. It does, however, involve more manual effort than if the invoice was paid using the API system.

Since it is desirable to maximize the use of the API system, this cost-benefit analysis evaluates alternative courses of action for situations requiring the EOS clause in its current form. Where required for comparison purposes, methodologies are developed to measure elements of the various alternatives.

II. METHODOLOGY

Four costs were identified as relevant to the study. Methodologies were developed to compute these costs as follows:

A. Cost to Manually Handle Invoices. The additional manual effort to handle invoices when the EOS is not furnished with the original invoice. This was calculated by comparing the following steps to similar actions in existing, comparable Defense Integrated Management Engineering System (DIMES) Special Purpose Data (SPD) standards:

1. Review invoice packet to determine if EOS was overlooked and is actually attached to the invoice - .0126 hours.

2. Review the actual contract to verify that the EOS clause is required by contract - .0916 hours.

3. Correct the data base for either of the above two steps and recycle the invoice through Invoice Control - .2735 hours.

4. Return the invoice requesting the contractor furnish us with the necessary EOS. When this is received, the invoice is reinput as a new invoice - .1465 hours.

The last three steps do not happen with each manual Material Acceptance and Accounts Payable Report (MAAPR), therefore a frequency is used to adjust for total time to process EOS invoices manually. The total time (in hours) is multiplied by the average hourly salary of the person doing the work. The final cost figure incorporates factors for fringe benefits and leave. Both the frequencies and average grade figures are estimates provided by personnel from various payment centers.

The point of count for this calculation is the number of manual MAAPRs generated with the EVIDENCE OF SHIPMENT REQUIRED message. Of those MAAPR messages which cause manual payments (See Appendix B), EVIDENCE OF SHIPMENT REQUIRED was on almost 13 percent of the manual pays. It was the only message stopping API almost 7 percent of the time.

B. Contractor Administrative Charges. The cost the contractor charges us to administer this clause was considered negligible. The only exception is Alternative 9 (Require Acceptance at Destination when FOB is Destination) which is discussed further in paragraph IV A 1 below.

C. Cost of FAR Change. The cost of making a change to the FAR was estimated using input from the DLA Defense Acquisition Regulation (DAR) Council Policy Member. The calculation is in Attachment 1 to this Appendix.

D. Missing Shipment Costs. This is the cost of the risk the government assumes by changing or eliminating the EOS clause. This is the value of material that will not be received if the current clause is changed or eliminated. This is not readily quantifiable, but will be expressed in relative terms by comparing each alternative to the status quo. In some cases it will be readily apparent that this cost would be offset by savings. In other cases, the cost of the missing shipment will be so high or low compared to the cost offset (or saved) by it, that the best alternative will be obvious.

III. ALTERNATIVES STUDIED

The criteria for choosing the best alternative was least cost. However, if the alternative does not enable DLA to meet its mission of ensuring delivery, it will not be considered viable. We studied nine alternatives, described briefly below. See Attachment 2 to this Appendix for details on each alternative.

The alternatives ranged from the status quo to modifying or eliminating the FAR clause. We examined combinations of the following: paying upon acceptance at Source, requiring contractor to keep EOS on file, excluding parcel post and/or common carrier shipments from EOS

requirement, allowing only acceptance at Destination when FOB is Destination and requiring EOS only for shipments over a specified dollar value threshold.

IV. ANALYSIS

A. Costs and Benefits of the Alternatives. Details of the costs of each alternative are in Attachment 2 to this Appendix. Using these costs, each alternative is compared to the status quo. Details of this analysis are contained in Attachment 3 to this Appendix.

There are intangible benefits to the current EOS clause. It is an internal control check on the payment system to pay only with reasonable assurance that the material is shipped. Although there are some concerns that our current EOS requirements do not actually prove what the contractor shipped, it provides traceability. From a legal standpoint, a signed EOS by the contractor makes it easier for the government to prove failure to ship.

B. Review of Invoice Input Process. Payment personnel estimate that 60 percent of the EOSs thought to be missing are found later in the original invoice packet by the payment people. The primary reason so many EOSs are overlooked is because they are not required on all invoices. Therefore, invoice input personnel do not spend a lot of time looking since EOS is not always required. The natural tendency is to not look thoroughly because EOS is required only 25 percent of the time.

A simple solution to this problem is to indicate on-line, in the Mechanization of Contract Administration Services (MOCAS) system, whether EOS is required or not. If the invoice input person sees the message that EOS is required, they know their efforts to find an EOS will not be in vain. The invoice input process already accesses the file in which the EOS Required indicator resides. The change would then only be a matter of retrieving the information and generating a message on the screen.

This simple systems change would eliminate nearly 60 percent of the MAAPRs that are manual only because of the EVIDENCE OF SHIPMENT REQUIRED message. From our sample, this is estimated to be 33,000 MAAPRs a year (60 percent of the 6.9 percent of all MAAPRs with only EOS stopping API or 4.14 percent of all manual MAAPRs). Because this change would eliminate the need for these MAAPRs to be manually handled at all, to compute the related savings, the steps and frequencies used in Attachment 2 are changed. Only steps 1 (review the invoice packet) and 3 (correct data and recycle) are avoided. However, because they are avoided on all of the MAAPRs being eliminated, the frequency for these steps is 1. Therefore, the cost of each MAAPR avoided by making this change is $4.50. The yearly savings for this change is estimated at nearly $150,000. The DLA Systems Automation Center (DSAC)

estimates a onetime cost for this systems change would be a about $2,500. Therefore, there is a net savings of over $146,000 the first year and almost $149,000 each succeeding year. This minor systems change is considered to be separate from the above alternatives because it should be done regardless of which alternative is chosen.

V. CONCLUSIONS

A. Retain Current EOS FAR Clause. Since the manual handling of EOS MAAPRs is not highly labor intensive, it does not take a lot to make the alternatives more expensive than the status quo. Missing shipments totalling under $260,000, throughout the Defense Contract Management Command (DCMC) in one year, would make any of the alternatives more costly than the status quo.

Because of the risk the government is subjected to, the status quo is economically feasible for the EOS clause. The savings generated from the alternatives would be easily overwhelmed by the financial cost and mission impact of missing shipments. The intangible benefits should not be overlooked. It is just not that expensive to process these manually compared to the assurances we receive that the material is shipped. If we do not get material when we ask for an EOS, it is more likely to be a shipper's mistake or fraud, for which we have recourse to compensation. If it is fraud, the signed EOS makes it easier for DLA to prove its case.

B. MOCAS Change Needed for Invoice Input. A change is needed in the invoice input process for contracts containing the EOS clause. To assure that invoice input personnel look for the EOS only when it is necessary, MOCAS should be changed to indicate on-line when EOS is required. If invoice input personnel see the message that EOS is required, they will search more diligently for an EOS. There would be a net savings of over $146,000 the first year and almost $149,000 each succeeding year. This change is not part of the alternatives studied above because it is important to make this change whether the status quo is changed or not.

VI. RECOMMENDATIONS

A. Provisions of the EOS clause should remain unchanged. Manual handling savings generated by changing the clause are anticipated to be small in comparison to the risk of undelivered goods for which the government has already paid.

B. Change MOCAS to alert input personnel to the presence of the EOS clause as the invoice is being input. The invoice package will be thoroughly searched for EOS only when required. Inputting EOSs upon original invoice input that have previously been overlooked could save over $146,000 the first year and almost $149,000 each succeeding year.

Attachment 1

Cost to Change the FAR

GRADE	# PERS	HRLY RT *	# HRS	COST
SES	1	61.64	2	$123.28
GS-15	11	52.90	2	$1,163.80
GS-14	2	44.97	40	$3,597.60
GS-13	3	38.05	40	$4,566.00
		FED REG -TWICE		$900.00
			TOTAL	$10,350.68

* Step 5 of the Grade, includes factors for leave and training (22%) and fringe benefits (29.55%).

Attachment 2

Costs of Alternatives

ALTERNATIVE	Cost of manually handling EOS MAAPRs	Cost to Change FAR	Risk that contractor doesn't ship, but is paid
1-Status Quo RECOMMENDED ALTERNATIVE Keep FAR Clause, pay manually when EOS rcvd	$260 451.20 *	$0.00	NONE - PRIMARY REASON FOR RECOMMENDATION
2-Elim. FAR Clause, pay API upon Acc-Orig	$0.00	$10,350.68	Unknown, Rely Solely on Good Will of Contractor
3-Keep FAR Clause, pay API upon Acc-Orig	$0.00	$0.00	Less Than Alt 2, Clause Helps, But No Enforcement
4-Change FAR, require cntrctr keep EOS on file, enforce with fine, pay API upon Acc-Orig	$0.00	$10,350.68	More Than Alt 1, Less Than Alt 3
5-Change FAR Clause, require EOS over $ treshld (manual pay when EOS rcvd), pay rest API upon Acc-Orig	Less Than Alt 1	$10,350.68	More Than Alt 1(only for small $ shpts)
6-Change FAR Clause, elim. EOS for parcel post (pay API upon Acc-Orig), rest manual pay when EOS rcvd	Less Than Alt 5	$10,350.68	More Than Alt 1(only for parcel post shpts)
7-Change FAR Clause, elim. EOS for pcl pst & other over $ thrshld (pay API upon Acc-Orig), rest mnl pay when EOS rcvd	Less Than Alt 6	$10,350.68	Less Than Alt 6
8-Change FAR Clause, elim. EOS for pcl pst/common carrier (pay API upon Acc-Orig), rest manual pay when EOS rcvd	Less Than Alt 7	$10,350.68	Less Than Alt 7
9-Eliminate FAR Clause, mandate Acc-Dest when FOB-Dest, pay API upon Acc-Dest	$0.00	$10,350.68	None - But Added Administrative Cost Prohibitive (Just $3/contract costs over $270,000)

* Costs for manually handling EOS MAAPRs under Alternative 1:

STEP	SPD TIME	FREQ-UENCY	SALARY**	# OF MAAPRs	TOTAL PER STEP
1. Review Invoice packet.	0.0126	1.00	$16.23	55,148	$11,277.66
2. Review contract.	0.0916	0.40	$16.23	55,148	$32,794.71
3. Correct data, recycle.	0.2735	0.75	$16.23	55,148	$183,597.55
4. Request EOS, reinput.	0.1465	0.25	$16.23	55,148	$32,781.28
				TOTAL	$260,451.20

** Salary is for GS-6, Step 5, includes 22% for leave and training and 29.55% for fringe benefits

Attachment 3

Comparison of Alternatives

1. The drawbacks to Alternatives 2 (eliminate the clause and pay API upon Acceptance at Source) and 3 (keep the clause, require EOS, but pay API upon Acceptance at Source) are there is virtually no protection for missing shipments. These alternatives are up to $260,000 cheaper than the status quo, but contractors would be paid for all material without any assurance that it has been shipped.

2. Alternative 4 (enforce that contractor keep EOS on file, pay on acceptance at Source) would eliminate all manual handling required by the status quo. The protection against missing shipments is not as good as the status quo, but better than Alternative 3 (keeping current clause, but use API upon Acceptance at Source). Since a FAR clause is required for this alternative, the estimated savings is less than $250,000. The risk of the government not receiving shipments is not worth this difference.

3. Alternatives 5 through 8 varied the types of shipments needing EOS. The costs of manually handling invoices decreased as the requirement for EOS was removed from certain shipments. However, the risk of not receiving shipments increased with the types of shipments excluded from requiring EOS. All these alternatives need a FAR change to be implemented. Therefore, the maximum possible savings (due to not needing EOS on as many shipments), less the cost of the FAR change, is $250,000. The savings will not nearly reach this maximum for any one of these alternatives. (The cost of manual handling and possibly missing shipments are both greater than 0. Therefore, the alternatives are less than $250,000 cheaper than the status quo.) Since the possible savings are even less than those in Alternative 4, the conclusion is the same. The risk of the government not receiving shipments is not worth this difference.

4. Alternative 9 (if FOB is Destination, require Acceptance at Destination) contains no risk that the contractor will not ship, similar to the status quo. However, the administrative costs of Alternative 9 are greater than the cost to manually handle invoices needing EOS. The percent of contracts on-hand that have the EOS clause is nearly 25 percent. DLA-wide this would be over 90,000 contracts. A charge of even $3 per contract (which is inconceivable due to the additional costs a contractor incurs with Destination Acceptance) would make this alternative more expensive than the status quo.

APPENDIX F

MANDATORY REVIEW/OTHER

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I. INTRODUCTION

The Mandatory Review/Other (MRO) message is a catchall, used when it is necessary to stop Automatic Payment of Invoices (API) for a reason not covered by any other message. To generate the message (and stop API), payment personnel input (with one exception described below) a "9" in the data field RVU-CONTRS (Mandatory Review Code) on the provisions data screen. There should be an accompanying remark (describing what "other" means) in the R5 or R7 remarks blocks describing why the "9" has been input to stop API. In all cases, including the exception, the "9" must be removed manually to restore API, when the conditions requiring manual pay no longer exist.

The exception is: MRO is automatically established when the indicator generating the AWAITING HARD COPY RECEIPT (AHCR) message is established for Military Standard Contract Administration Procedures (MILSCAP) generated contract and contract modification data. The "9" is transmitted in the RVU-CONTRS block as part of MILSCAP transactions, both contracts and modifications. The AHCR indicator stops API until the hard copy document is received. This indicator also serves another purpose; it triggers messages to the Buying Activity requesting the hard copy document. When the AHCR indicator is manually removed in the Mechanization of Contract Administration Services (MOCAS) system, it stops the requests to the Buying Activity and allows API to resume. The purpose of the MRO indicator in this case is to block this resumption of API until after the hard copy document has been reviewed. Like any other MRO, however, it stops API until the "9" is removed manually from the RVU-CONTRS block.

Among other valid reasons to use the MRO message to stop API are: demand letters, terminations, cancellations, and duplicate payments.

II. ANALYSIS

A. Data. Of those Material Acceptance and Accounts Payable Report (MAAPR) messages which cause manual payments, (see Appendix B for details), MANDATORY REVIEW/OTHER occurred third most frequently - in about 12 percent of the manual pays (2,274 out of 19,620). Nearly half of the times this message is on a MAAPR it is the only message stopping API (almost 6 percent of the total number of MAAPRs in our sample - 1,129 out of 19,620).

B. Occurrence with Other Messages. Looking at the other messages that occur with MRO, no unusual relationships were apparent. Five of the clauses that appeared on MAAPRs with MRO are the type that may be resolved during the life of a contract. These five are: AWAITING HARD COPY RECEIPT, FIRST ARTICLE APPROVAL REQUIRED, INV/MAAPR AMT ZERO, VO DEDUCTION PENDING, and MAAPR-INV $ NOT EQUAL. Where any combination of these clauses are the only other clauses stopping API (besides MRO), MRO may become the only message stopping API (when the other conditions are resolved). MAAPRs with MRO and any combination of these five

clauses account for up to four percent of all MAAPRs in our sample. All the other messages are for the life of the contract, barring a contract change deleting the condition.

C. Findings. Intuitively, considering that the MRO message is a catchall, to be used when no other message is appropriate, the frequency with which it occurs in our sample seems extremely high. This was verified in conversations with payment personnel. Their experience was that the "9" remains in the RVU-CONTRS block after the condition requiring that API be stopped has been resolved. The specific case that seems to cause the most problems is when MRO is automatically generated at the same time the AHCR is established. Since the "9" is automatically established in the data base for MILSCAP contracts and modifications, there are no entries in the R5 and R7 Remarks. In this case, if the "9" is not removed when the hard copy is reviewed and changes made, there will be no way for a payment clerk to know why the MRO exists (no R5 and R7 Remarks are necessary). In all cases with MRO, if the remarks blocks are not adequately completed, the person paying the invoice probably does not know why the MRO message is being generated. He/she is usually unwilling to remove the "9" causing the MRO when they do not know why it is there. The MRO continues to stop API, in this case unnecessarily.

The R5 and R7 Remarks are in the contract data base and do not appear on the manual MAAPR. We looked at the contract data base of one of the former Defense Contract Administration Services Regions (DCASRs) for contracts where the Mandatory Review indicator was "9" (Other) and the Hard Copy had been received. Only 13 percent of these contracts had R5 and R7 remarks that indicated they should really be in the catchall, MRO. Over 55 percent of these contracts had either no entries in the R5 and R7 blocks, or the entries did not indicate a reason for stopping API. Among the remarks found frequently in our analysis that do not affect manual payment were: MILSTRIP (Military Standard Requisitioning and Issue Procedure), NON-MILSTRIP, FIN PAY NLA ISSUED (contract no longer active due to final payment). If the "9" was not in the data base for these contracts, all invoices against these contracts would go API (if all other MOCAS validations were passed).

Another finding is that MRO is being used when another message may be more appropriate. Keeping in mind that MRO is a catchall message (its disadvantage is that payment clerks do not readily know why API is stopped), this would be an improper use of the message. Among the messages that MRO was used in place of were: WITHHOLD, PATENT ROYALTY, VO DEDUCTION PENDING (for lump sum decreases - see Appendix G for details). Of the contracts with entries in either the R5 or R7 block, the remarks indicated another message (other than MRO) would have been appropriate 36 percent of the time. This is 21 percent of all the contracts we reviewed. All but a few of these (less than 20 contracts) were for the five messages discussed in paragraph II B above.

D. Alternatives. The analysis identified three areas that could reduce the number of MAAPRs where MRO stops API unnecessarily.

1. Consider the creation of a separate message when MRO is used frequently for a specific case.

2. Determine if API should be stopped when the MRO indicator is established, but there are no entries in either the R5 or R7 Remarks fields.

3. Use a more appropriate message when the situation calls for it.

III. CONCLUSIONS

A. New Message. The most obvious situation where the MRO message stops API frequently for a specific case is when it is automatically established (along with the AHCR indicator) upon receipt of MILSCAP contracts and modifications. Since the indicator is established automatically, there are no R5 and R7 remarks to support the "9" in this situation. We asked the payment clerks why there were such a large number of MRO indicators in our data base review without R5 and R7 remarks. The consensus was that they are mostly due to the failure to remove the "9" in the RVU-CONTRS block after the hard copy of a MILSCAP transaction has been reviewed. The review of MAAPRs in our sample shows payment personnel are removing the AHCR indicator in a timely manner. However, after the AHCR indicator is removed, personnel changing the data base after reviewing the hard copy document no longer have evidence as to why the MRO exists. Therefore, they are reluctant to remove the MRO indicator.

Establishing a new message (possibly HARD COPY REVIEW REQUIRED) would clarify why API is stopped. The Defense Logistics Agency Systems Automation Center (DSAC) says another, unique code could be added to the table allowed for the RVU-CONTRS data field. To automatically generate this code when the hard copy is received is considered to be a minor change requiring about one month of programming effort (costing about $2,500). Under this suggestion, MOCAS would not generate a "9" in the RVU-CONTRS field when establishing the AHCR indicator. To ensure this new code (HARD COPY REVIEW REQUIRED) is removed in a timely manner, another minor programming change is suggested. MOCAS would prompt the person inputting changes (if the HARD COPY REVIEW REQUIRED code exists on the contract) to respond to an on screen question such as "Is your review of the document complete?" When the answer is "Yes," MOCAS would remove the indicator established for HARD COPY REVIEW REQUIRED, and API would continue on the contract. This minor program change would involve another month of effort on DSAC's part, costing another $2,500.

The above changes will assure the code causing API stoppage will be removed in nearly all cases. The annual number of manual MAAPRs caused

only by MROs is estimated from our sample to be over 46,000 MAAPRs (5.8 percent of the estimated 799,253 manual MAAPRs in FY 1990). The cost of the entire programming change is so small ($5,000), that eliminating only 250 manual MAAPRs (eight tenths of a percent of our annual estimate) makes the change cost effective. This calculation uses the figure of $19.98 per manual payment from Appendix C.

Our review of the contract data base found, in 55 percent of the contracts reviewed, there was no indication in the R5 and R7 remarks why MRO was stopping API. This 55 percent is a snapshot in time of the contract data base of one former Region, not of the 2 week sample of manual MAAPRs collected from each payment center. Nevertheless, it is a logical assumption to believe that this frequency would be similar in the MAAPRs generated from these contracts in the future. If only 30 percent of the MAAPRs in our 2 week sample where MRO was the only message stopping API (a conservatively low estimate, considering the 55 percent figure above) were eliminated by this proposed MOCAS change, DCMC would save over $275,000 a year. First year savings would be decreased by the fixed cost of the program change ($5,000) for a net savings of over $270,000.

B. Require Reason. The reason MRO is stopping API should be noted in the R5 or R7 Remarks field. Without the reason, the message really has little value. The payment clerk does not know what to do because of the MRO (without an explanatory remark), or when to remove it.

Our analysis of the contract data base showed 41 percent of all these contracts had no entries in either the R5 or R7 Remarks field. Another 38 percent of these contracts had remarks in the R5 or R7 fields that either were not reasons to stop API (17 percent) - see paragraph II C, or indicated more appropriate messages (21 percent) - see paragraph II C.

Although it is generally agreed that MRO without valid R5 and R7 remarks (indicating the reason MRO is stopping API) should be eliminated, no further programming effort should be necessary. Our analysis indicates the program change in paragraph III A above, along with increased emphasis to use MRO only when no other message is appropriate, will eliminate excessive MROs. However, so the contracts now in the system do not cause excessive MROs before the recommended changes become effective, a purge program is suggested. This program would eliminate the "9" from the RVU-CONTRS field from all contracts with no AHCR indicator and no entries in either the R5 or R7 blocks. This type of program has been run from time to time at the payment centers and the cost is negligible.

C. Use Most Appropriate Message. Of the contract data base entries we reviewed, 21 percent had R5 or R7 remarks indicating another manual MAAPR message would have been more appropriate.

At least in the one payment center where we reviewed the contract data base, MRO is sometimes used to stop API for the patent royalty and

withholding clauses, and routinely used for decrease/increase modifications (See Appendix G for details). It may appear to be a moot point because the invoice will be paid manually whether it is stopped as an MRO or as one of the other appropriate messages. However, once the situation is resolved and API could resume, it is likely the "9" will not be removed and MRO will continue to stop API. This would not happen if the appropriate message was used, then removed properly. Using the proper message also helps the payment clerk process the manual payment faster and more accurately.

This change would be easy to implement (because it does not involve programming changes), but difficult to actually accomplish (because it involves changing mindsets). The savings for this change in procedure would be masked by those calculated in paragraph III A above. However, it would be expected that the overall percentage of manual MAAPRs eliminated, used in that estimate, would increase to greater than the 30 percent used in the calculation.

IV. RECOMMENDATIONS

A. Add New Manual MAAPR Message. Require a new message for the case where MRO is automatically generated for MILSCAP contracts and modifications (at the same time the AHCR message is established). The required MOCAS program change would establish a new code to designate that the hard copy has not yet been reviewed. The "9" would no longer be used in this situation. A manual MAAPR message, such as HARD COPY REVIEW REQUIRED, would stop API until the new code is removed. As long as this new code remains in the RVU-CONTRS field, an on-screen prompt will ask data input personnel accessing the contract if the review of the MILSCAP document (contract or modification) is complete. When this response is "Yes," MOCAS will remove the code generating the HARD COPY REVIEW REQUIRED message, and API will continue (if all other conditions for API are met). A conservative estimate of the savings from this change is over $270,000 the first year and over $275,000 each succeeding year. This estimate includes those generated by the following two recommendations, as they enhance the effectiveness of this MOCAS change.

B. Purge Contract Data. Run a purge program to eliminate the "9" from the RVU-CONTRS field from all contracts no longer having an AHCR indicator and no entries in either the R5 or R7 blocks. This will prevent contracts currently in the system from causing excessive MROs while the recommended changes take effect.

C. Use MRO Message Judiciously. Use MRO strictly as the catchall it was designed to be. Clarify current procedure to restrict use of this message to only when another message is not appropriate. See Appendix G for details on the use of MRO for lump sum deduction modifications.

APPENDIX G

VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS

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I. BACKGROUND

Two Material Acceptance and Accounts Payable Report (MAAPR) messages, VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS, are used to accomplish the same purpose: collect funds that contractors owe the government. They are both formal methods used to collect these funds; the difference is the level at which the funds are collected. VO DEDUCTION PENDING stops the Automatic Payment of Invoices (API) system from paying automatically until the funds are collected, for invoices against the contract for which the funds are owed. When CONTRACTOR INDEBTEDNESS is used to collect funds from a contractor, it stops API on all contracts for the contractor, until the funds are collected. CONTRACTOR INDEBTEDNESS is used when there are indications the funds cannot be collected against the contract for which the funds are owed. It should be used cautiously for large contractors, because it would then cause manual payments for all invoices submitted by the contractor.

Although the subject messages are intended to collect funds already paid to the contractor, they are also appropriately used to stop API to process lump sum decrease modifications. Lump sum deduction modifications decrease the total to be paid to the contractor. However, they are not usually funds already paid out to the contractor. Since the lump sum does not change the unit price of items on the contract, there is no way currently to deduct these funds without stopping API and manually making the payment.

As shown in Appendix F, the MANDATORY REVIEW/OTHER (MRO) message is often used when the VO DEDUCTION PENDING message (or CONTRACTOR INDEBTEDNESS if conditions warrant) would be more appropriate. These MAAPRs are included in this analysis of the VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS messages, to see if the use of MRO in their place indicates problems with the subject messages.

To restore API when the VO DEDUCTION PENDING message is applicable, the Credit Memo must be recoded to "F". When the CONTRACTOR INDEBTEDNESS message is used, API can only be resumed when the Office of Telecommunications and Information Services (OTIS) manually removes the indicator from the data base.

II. ANALYSIS

A. Frequency of the Messages

1. In the sample of MAAPR messages causing manual payments (see Appendix B), VO DEDUCTION PENDING was the eighth most frequent message, appearing 3.9 percent of the time. Half of the times this message is on a MAAPR it is the only message stopping API (almost 2 percent of the total number of MAAPRs in our sample).

2. CONTRACTOR INDEBTEDNESS occurred rather infrequently in the sample, twentieth among all the messages (1 percent of the time). This message occurs by itself, as the only message stopping API, over 60 percent of the time it is on a MAAPR (0.7 percent of all the MAAPRs in the sample). Alone it is rather insignificant, but it becomes significant because it is another way to do VO DEDUCTION PENDING, thus its frequency can be added to the frequency of the VO DEDUCTION PENDING message.

B. Occurrence with Other Messages. The MAAPR-INV $ NOT EQUAL message occurs often with both VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS messages. However, payment personnel interviewed could not point to specific reasons why this might happen. Since MAAPR-INV $ NOT EQUAL is the most frequent of all the MAAPR messages, it makes sense that it occurs often with these two messages.

C. Using MRO for Lump Sum Deductions. MRO was found in Appendix F to be used often for processing lump sum deduction modifications. Twenty-one percent of the contracts reviewed (with the hard copy already received and MRO indicator present) contained R5 or R7 remarks indicating messages other than MRO were more appropriate. Of this 21 percent, 85 percent (or 18 percent of all contracts reviewed) had R5 or R7 remarks indicating they were for lump sum deduction modifications.

III. FINDINGS

A. Appropriateness of Messages. Payment personnel indicated that, although VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS are the most appropriate for lump sum deduction modifications, they are too formal. They rely on someone other then the payment clerk to remove the indicator stopping API after the appropriate funds have been collected. The advantages to using MRO for lump sum deduction modifications are: removal of the indicator stopping API is under the control of the payment clerk and it is possible to put more information in the R5 and R7 remarks to allow a payment clerk to process lump sum deductions more effectively.

B. Analysis. Three areas were identified that could yield savings in the use of the VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS messages. One, identify specific cases for which new messages would be more appropriate. Two, evaluate whether VO DEDUCTION PENDING, CONTRACTOR INDEBTEDNESS and/or any new messages could be automated, thus avoiding manual payments for these situations altogether. Three, eliminate the instances where these, and any other messages used for situations covered by these messages, continue to unnecessarily stop API after the appropriate funds have been collected.

1. The large number of lump sum deductions processed under the MRO message indicates the need for a new message to process lump sum deduction modifications. The two current messages are too formal to be used easily and seem to encourage circumventing prescribed procedures.

a. Alternatives. There are several options to resolve the problems encountered for this situation:

- A new message for lump sum deductions only could be established. This would have the advantage, similar to the advantage described for the MRO message, of making it clear to payment personnel why API is stopped for this invoice. A disadvantage is there would be no automation of the removal of the indicator stopping API.

- Automating the lump sum deduction process within the Mechanization of Contract Administration Services (MOCAS) system would negate the disadvantage of the previous option. The data base would include a field where input personnel could designate that there is a lump sum deduction and indicate the amount. The disadvantage here is that there are many different ways lump sum deductions can be taken, limited only by the imagination of the contracting parties involved. The amount can be taken on the next invoice, on the last invoice, incrementally on the remaining invoices until the total is reached, incrementally on the next X number of invoices, etc. The programming effort would be monumental.

- To make automating a more viable option, MOCAS could be changed to do lump sum deductions automatically for the most common situations. Then, use a new message to stop API for unique situations.

b. Computation of savings.

- Savings will be estimated for the compromise option described above, automating the common types of lump sum deductions and using a new message strictly for lump sum deductions. The MAAPRs that would be avoided are those with MRO messages where the R5 or R7 remarks indicate API is stopped for a lump sum deduction. A review of the R5 and R7 remarks for these MROs shows they are nearly all for the common types of lump sums that should be automated.

- Eighteen percent of the contracts reviewed in the sample of a former Defense Contract Management Region (DCMR) data base (with the hard copy already received and MRO indicator present) contained R5 or R7 remarks indicating lump sum deductions. See paragraph II C above. Although this does not translate directly to the number of MAAPRs with MRO that are actually for lump sum deductions, it is a reasonable assumption they will be similar. Rounding to the conservative side, a figure of 15 percent was used in our estimates. This is 15 percent of the manual MAAPRs caused only by MRO (5.8 percent of all manual MAAPRs) or almost 7,000 manual MAAPRs per year. Using the $19.98 per manual MAAPR figure calculated in Appendix C, the estimated annual savings is $138,000.

2. Automating the collection of funds from contractors (the VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS manual MAAPR messages) is already being planned as part of Contract Payment and Reporting (CPR).

However, there is a great deal of savings to be achieved between now and the time CPR becomes operational. When either VO DEDUCTION PENDING or CONTRACTOR INDEBTEDNESS is on a MAAPR, over half the time it is the only message stopping API. This is 2.6 percent of all the manual MAAPRs in our sample, or an estimated 20,000 manual MAAPRs. Therefore, the Defense Logistics Agency (DLA) could save an estimated $415,000 annually by automating these messages.

3. Over half of the MAAPRs with either the VO DEDUCTION PENDING or CONTRACTOR INDEBTEDNESS message were for repetitive contracts/contractors. Repetitive contracts/contractors were conservatively described as: more than ten invoices against the same contract (for the VO DEDUCTION PENDING message) or more than ten invoices against the same contractor (for the CONTRACTOR INDEBTEDNESS message). The assumption was that generally a debt would normally be collected within ten invoices. In over half of these cases (or 1.4 percent of all the manual MAAPRs in our sample), it is the only message stopping API. If only half of the repetitive situations described above could be avoided, there would be an estimated annual savings of over $110,000 (nearly 5,600 manual MAAPRs could be avoided).

IV. CONCLUSIONS

A. Lump Sum Deduction Modifications. The two messages studied do not work very effectively in the lump sum deduction modification situation. MOCAS should be changed to automatically process lump sum deduction modifications in the most common situations. Whether it is called CPR or not, MOCAS should be able to automatically deduct a lump sum on, for example: the next invoice submitted after the modification is entered in MOCAS, the last invoice on the contract, and incrementally on each succeeding invoice until the lump sum is satisfied. For the remaining situations, MOCAS should continue to stop API, but a new message specifically for lump sum deductions should be created. Automating lump sum deductions can save an estimated $138,000 annually.

B. VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS. These two messages serve their purpose and should be retained as they now stand. However, collecting these funds automatically, not making payments manually, would save an estimated $415,000 per year. Since these functions are scheduled to be automated in CPR, the question is not if, but when does it become cost effective to implement this change. Automating these functions avoids the necessity of eliminating repetitive contracts/contractors described above.

C. CPR Considerations. Automating lump sum deductions, VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS are features of CPR. Savings from this automation alone is estimated at $550,000 due to avoiding 27,000 manual payments. The decision is not whether it is a

good idea to automate these functions, but whether DLA can afford to wait until CPR is implemented. This decision depends largely on when CPR will be functional, which requires a firm estimated date for implementing CPR.

V. RECOMMENDATION

Implement automated lump sum deductions and collection of funds from contractors (VO DEDUCTION PENDING and CONTRACTOR INDEBTEDNESS) at the earliest possible time. This would also include a new MAAPR message to stop API for the uncommon lump sum deduction processing option. Not automating these functions is costing DLA $550,000 a year to make these payments manually. Unless this enhancement is available and implemented through CPR very shortly, use the estimated savings to justify doing a separate systems change now.

APPENDIX H

FIRST ARTICLE APPROVAL REQUIRED

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I. INTRODUCTION

First Article (FA) testing is required for specific instances where there may be a problem with the contractor producing the item. When an invoice is received, the Mechanization of Contract Administration Services (MOCAS) system determines if all line items of the contract with FA requirements have been accepted. If any FA requirements are not satisfied, MOCAS stops the Automatic Payment of Invoices (API) and generates a manual Material Acceptance and Accounts Payable Report (MAAPR) with the message FIRST ARTICLE APPROVAL REQUIRED. This stops the government from paying for production units before the FA is approved.

When payment center personnel process a manual MAAPR with this message, they must determine if the FA has been approved. This is accomplished by obtaining a copy of either the Procuring Contracting Officer's (PCO) letter to the contractor approving the FA, or a copy of the DD Form 250, Material Inspection and Receiving Report, signed in the Acceptance block (Source or Destination, depending on the contract terms). Acceptance for a line item with FA requirements is input using regular DD 250 procedures. When all line items with FA requirements have been accepted, MOCAS automatically updates the FA indicator from an "F" to an "A." API then resumes if no other conditions preventing automatic payments are present. If the invoice being processed is the one that changes the "F" to an "A," it will pay API.

II. ANALYSIS

A. Data Analysis. Of those MAAPR messages which caused manual payments (see Appendix B for details), FIRST ARTICLE APPROVAL REQUIRED was on almost 4 percent of the manual pays. This was the ninth most frequent of the over 50 messages in the sample. FIRST ARTICLE APPROVAL REQUIRED was the only message stopping API 1.6 percent of the time.

Intuitively, these numbers seem large for the situation this message should represent. It means an acceptance document (usually a DD Form 250) generated a MAAPR on a contract, and MOCAS shows one or more line items with FA requirements that have not been processed as accepted. If the data base is correct, this should happen only when there is more than one line item with FA requirements on a contract and they have not all been accepted yet. The DD 250 that generates the MAAPR for production items is signed by the Quality Assurance Representative (QAR). Since the QAR is not supposed to sign the acceptance document until all contractual terms (including FA acceptance) have been met, there should not be manual MAAPRs (with the FIRST ARTICLE APPROVAL REQUIRED message) generated for production items. A manual MAAPR for production items with this message would mean that the contractor has invoiced for production items before all contractual FA requirements have been met.

Many of the 700 MAAPRs in our sample with the FIRST ARTICLE APPROVAL REQUIRED message were for the same contract and call order, but different shipments. The shipment numbers on many of these were rather high (greater than 5). This would indicate these shipments were probably for production items, for which MOCAS is indicating the FA was not yet accepted. This would actually be the case for extremely rare situations, such as when the PCO notifies the contractor, in writing, that they can ship before the FA has been approved. The number of MAAPRs where this happened in the sample does not indicate a rare situation as described above, but rather a data base or procedural problem.

B. FA Approval Process in MOCAS. Three payment centers, the Defense Logistics Agency (DLA) Finance Center (DFC), and the DLA Systems Automation Center (DSAC) provided information about the way MOCAS stops, then restores, API for FA approval. The payment centers all process FA acceptance the same way. They delete data field ACT-FRST-AR (FIRST ARTICLE ACCEPTANCE DATE), on the line item record and the "F" from data field SPC-CON-PVN (SPECIAL CONTRACT PROVISIONS) on the provisions data record.

The above procedure seems unduly complicated. We asked DSAC if this is the way this process should work. They said MOCAS stops API when data field PRE-PROD-SP (FIRST ARTICLE/PREPRODUCTION SAMPLE) on the provisions data record, is an "F." This is confusing because this data element is actually the FA Status Indicator, although it is hard to tell from the field name. This "F" is automatically generated upon input of a date in the FA Acceptance Due Date (ACT-FRST-AR) field on the line item record. When acceptances for all line items containing FA requirements have been processed (using normal DD 250 processing procedures), the "F" in the PRE-PROD-SP field changes to an "A" and allows API to resume.

That MOCAS is not being used properly to process FA Approvals was demonstrated when we looked at the MOCAS data base for contracts with FA requirements in one of the former Defense Contract Management Regions (DCMRs). Of the 129 contracts with FA requirements, 21 had an "F" in the PRE-PROD-SP field when the data showed it no longer was appropriate. Four of these no longer had a date in the ACT-FRST-AR field, 17 of these showed all line items with FA requirements as accepted. Any invoice against these contracts will be manual payments (because of the "F" in the PRE-PROD-SP field). These manual payments would have been avoided if FA requirements were processed properly. If the "F" incorrectly remains in the provisions data record because the line item was improperly processed for FA requirements, all subsequent payments will be manual. Two situations may have led to the "F" improperly remaining as the status:

- If the payment center deletes the ACT-FRST-AR field before the system processes the acceptance for that line item, the "F" indicator may not update. When the system gets the acceptance to process, there is no date in the ACT-FRST-AR field. MOCAS doesn't know it is processing an FA requirement.

- If the date in the ACT-FRST-AR field is input after the acceptance for that line item has been processed, the "F" indicator will not change automatically. In this case, the indicator is generated after the acceptance is processed. Since the acceptance action will never occur again, the indicator has no chance to change from "F" to "A." Therefore, API may never resume on this contract.

The confusion about processing the FA acceptance stems in part from the "F" in 2 different fields (SPC-CON-PVN and PRE-PROD-SP) on the Provisions Data screen, meaning that a First Article is required. However, the "F" in the SPC-CON-PVN field does not change to an "A," since an "A" indicates another contract provision (Liquidated Damages).

C. Impact on Contract Management. Deleting the "F" in the SPC-CON-PVN field and deleting the date in the ACT-FRST-AR field adversely impacts Contract Management. Contracts fall out of Part A of the CAR if FA is the only reason they are there. They also lose visibility over which line items were for FA tests.

III. ALTERNATIVES. Three possible alternatives were considered: the way the process is now programmed to work; implementing a minor program change to make the process easier to use and understand; and deleting the requirement to stop API for FA approval. The reason MOCAS now stops API for FA approval is so the government is not put in the position of paying invoices when not contractually authorized. In this case, we are not contractually allowed to pay for production units if the FA has not been accepted. How well this is done by the alternatives will be assessed.

A. Current MOCAS Procedure. Retain the process as it is programmed to work, allowing MOCAS to update the FA indicator and restore API automatically.

ANALYSIS - The drawback to this is that it is confusing as to the meaning and/or purpose of the PRE-PROD-SP field. Also, as the current situation illustrates, people do not process the FA Approval properly because they do not understand how it works. If this alternative is adopted and people are instructed to "do it the way the system is supposed to work," in all likelihood improper input will continue, or resume after some time has passed. Effectively, there is no risk with this alternative because we do not pay until the FA Approval is in MOCAS. But there is a cost. The improperly handled FAs are manual payments due to system ineffectiveness.

B. MOCAS Systems Change. Another alternative is a minor MOCAS program change.

1. Change the PRE-PROD-SP field on the Provisions Data screen to something more descriptive, like FA-STATUS. The indicators for this field should be changed to "D" for Due and "A" for Accepted. This will avoid the confusion of using "F," indicating an FA is due, for two data elements (SPC-CON-PVN and PRE-PROD-SP), but for different purposes. Retain the way this indicator automatically changes and restores API.

2. On the line item data record, making the ACT-FRST-AR field something clearer, like FA-ACP-DUE, would improve the accuracy of the data in this field. This is one of the most important fields in the FA acceptance process, since a date entered here triggers the "F" in both the SPC-CON-PVN and PRE-PROD-SP (FA-STATUS) fields.

ANALYSIS - This is a viable alternative. The programming effort involves changing data field names and one indicator value. DSAC estimates this change would take about 6 months and would cost approximately $15,000. Because they would consider it a clarification change, DSAC feels it would get a low priority. The risk of paying for production items before FA approval is no greater than we currently assume. Of the MAAPRs where this is the only message stopping API (1.6 percent of the total number of manual MAAPRs), almost two thirds of these are invoices on contracts where at least five other shipments have been made. It seems reasonable that when you've made at least five shipments, the FA has really been accepted and the data base is more than likely wrong. Estimating from our sample, we could avoid 8,500 manual payments a year, with potential yearly savings of over $170,000. The savings figure uses $19.98 as the cost of an average manual payment (see Appendix C). The net savings for this MOCAS change is over $165,000 the first year and over $170,000 for each succeeding year.

C. Stop Manual Payments for FA Requirements. The change here is to continue API even when the data base indicates FA Approval is still required Invoice and Acceptance documents would be processed as they are now.

ANALYSIS - This alternative would eliminate all manual payments where the only message stopping API is FIRST ARTICLE APPROVAL REQUIRED (almost 1.6 percent of all manual MAAPRs based, on our sample). The estimated annual savings from this alternative are over $250,000 (almost 13,000 manual payments would be avoided). DSAC personnel say programming effort would be minimal, as this would simply be a matter of removing this message from the table of messages that stop API. Therefore, the net savings for this option are over $250,000 a year.

The primary concern with this option is the amount of risk the government will assume. That is, that a contractor might be paid without meeting FA Requirements. The degree of risk with this alternative, in reality, is not much greater than currently exists.

The primary protection against this risk is that no invoice is paid without an acceptance document, signed either at Source or Destination. The DCMR Chicago Office of Counsel stated this signature means that the government representative is saying that all terms of the contract have been met. In the context of this appendix, this means that they only sign the acceptance document when they know the FA has been approved.

The reason the government representative signing the acceptance document knows the FA is approved, and the payment office doesn't, lies in the way buying activities transmit FA Approval to interested parties. Defense Federal Acquisition Regulation Supplement (DFARS) Appendix I contains the instructions for using the DD Form 250. In cases where the acceptance is at Destination (as are most FA tests), the acceptance is not required to be sent to the contractor. To remedy this lack of notification to the contractor, the FA Test clause in the FAR states the Contracting Officer (CO) will notify the contractor in writing of the approval, conditional approval, or disapproval of the FA. This creates two sets of documents the CO transmits, to different parties, to notify them of the disposition of the FA. What typically happens is the CO sends the written disposition to the contractor without forwarding the signed acceptance to the paying office. The paying office then has to search for the letter of approval to the contractor, since this is usually the only document available. Since this letter is proof there has been acceptance of the FA, it is considered to be a proper acceptance document.

Since contracts stipulate what, if any, part of production can begin before FA is approved (for example, the purchase of long lead time items), the contractor is not really even allowed to submit production items unless the FA is approved. If we paid a contractor for production items and the FA was <u>really not approved</u>, there is little chance that the situation was <u>not</u> due to fraud or willful misconduct. Because there is very little risk, in reality, this alternative is a very viable option.

IV. <u>CONCLUSION</u>. Although all the alternatives discussed above are viable, the last one discussed, discontinue stopping API for FA requirements, offers the most payback. Annual savings of over $250,000 for this alternative can be achieved through the elimination of almost 13,000 manual payments a year. After discussions with the DCMR Chicago Office of Counsel, we concluded that the risk the contractor will ship production items without FA Approval is commensurate with the other alternatives studied. This is based on the fact that payment cannot be made without an acceptance document signed by a government QAR. When the government QAR signs the acceptance document, he/she is stating all contract conditions (including FA Approvals) have been satisfied. Even the action of the contractor offering production items without the required FA approval would be a violation of contract terms. The government will still be susceptible to fraud or willful misconduct, but that risk also exists now.

V. RECOMMENDATION. Implement the following MOCAS change and the corresponding procedure: delete FIRST ARTICLE APPROVAL REQUIRED from the table of those messages that stop API and pay all invoices with FA requirements automatically. There is already adequate protection in place to prevent the contractor from receiving payment without approval of the FA test. This in no way impacts FA Requirements in a contract, it only recommends that DLA pay all invoices on these contracts using API.

APPENDIX I

FOB ORIGIN/MINIMUM SIZE and GUARANTEED MAXIMUM SHIPPING WT

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I. INTRODUCTION

Several clauses may be involved when the Free On Board (FOB) point in a contract is Origin. (The FOB point determines who assumes the risk of transportation of the material. When FOB is origin, the government assumes this risk).

Federal Acquisition Regulation (FAR) clause 52.247-61, FOB Origin - Minimum Size of Shipments, requires the contractor to ship in carload or truckload lots except as otherwise directed in writing by the Contracting officer. The contractor is liable for any increased cost to the Government if shipments made within a delivery period were not consolidated. For example, a company might choose to make ten small parcel post shipments during one specified delivery period. If these ten shipments could have been more economically combined into one truckload shipment, the contractor could be liable for the excess shipping costs. When this clause is in the contract, the Mechanization of Contract Administration Services (MOCAS) system stops the Automatic Payment of Invoice (API) from paying automatically. On the final payment, (only if there have been multiple shipments), MOCAS generates a manual Material Acceptance and Accounts Payable Report (MAAPR) with the message FOB ORIGIN/MINIMUM SIZE (FOBOMS).

The closely related Guaranteed Maximum Shipping Weight and Dimensions (GMSW) clause described by FAR 52.247-60 also deals with FOB Origin shipments. As part of the contract offer, the contractor is requested to state shipment weights and dimensions. If separate containers are to be banded or skidded into a single unit, specific weights and dimensions must be provided. If delivered goods exceed the maximum weight and/or dimensions agreed upon, the contractor may be liable for the extra shipping costs. When this clause is in the contract, MOCAS stops API on the final payment, even if there was only one shipment. The message on the manual MAAPR in this case is GUARANTEED MAXIMUM SHIPPING WEIGHT (GMSW).

These clauses were combined in one cost-benefit analysis because many of the same criteria are used when they are included in contracts. When either or both of these clauses are in a contract, the Mechanization of Contract Administration Services (MOCAS) system generates a listing (BGBA 26) before the final payment is made. This Transportation Officer Approval Alert (TOAA) listing informs the transportation office that final payment on this contract is about to be made and indicates that one or both of these clauses are present in the contract. The Transportation Officer then reviews all shipments made up to this point to ensure compliance with these clauses.

II. ANALYSIS

One major cost involved in this analysis is the cost of manually paying an invoice versus the cost of an automatic payment through API. We estimated that making a payment manually costs $19.98 more than an

automatic payment. API is stopped on the final payment for these two clauses, as described above, to let the Transportation Officer review all shipments made under this contract to check for compliance with these clauses. It also enables the Government to recoup possible overcharges on the final invoice.

These clauses are occasionally input into MOCAS when they should not be, but our sample did not uncover widespread problems. They are incorrectly input at times for FOB Destination shipments or for Foreign Military Sales (FMS). These clauses should not be included for contracts under $25,000, and the Defense Logistics Agency (DLA) should be sure all payment centers follow this established procedure.

Another cost involved is the cost of the Transportation Officer compliance review. These reviews are intended to ensure the primary benefit of these clauses, which is the use of efficient, low-cost shipping methods. The average time a Traffic Management Specialist needs to do a review of this type is about one hour. The Specialist must first locate the contract in question along with the necessary shipping documents, such as the bill of lading.

These facts lead to the following questions: Is it cost efficient to include these clauses in contracts? How much economic benefit does the Government derive from these clauses? Would it be possible to eliminate or curtail the use of these clauses to the benefit of the Government?

III. RESULTS

Most contractor payments made under the current cash management program suspend (are delayed) for at least 25 days. Some payments do not suspend, such as progress payments, bureau vouchers (BVNs), and payments under certain discount terms. The vast majority of payments do suspend, however, and this 25 day period is more than enough time for the Transportation office to review shipments for compliance to these clauses. In fact, in most cases Transportation sends a response back to the Payment office within one week approving or disapproving payment. If the contractor has overcharged for transportation expenses, the Payment office can adjust the amount of this final payment.

Given this 25 day delay for payments, there is no compelling reason to stop an API for these clauses. The TOAA listing alerts the Transportation Officer well ahead of actual payment of the final invoice. If there was a noncompliance problem, the Transportation Officer in most cases could notify the payment personnel before final payment. In the unlikely event that the final payment were released and there was an overpayment, a demand letter could be sent to the contractor to recoup the overcharge. The Government is very rarely overcharged in this manner. When an overcharge does occur, it is often for such a small dollar amount that it is not worthwhile to try to

recover it. The transportation officers contacted regarding these reviews all said incidences of overcharge recoveries have been very infrequent. One 15-year veteran said he could remember only one incidence of recovery of a substantial amount. To illustrate further, the Defense Contract Management District Northeast Transportation office (DCMDN-AT) in Boston found no evidence of savings for 1,704 reviews done in a 6-month period.

Boilerplating of these clauses is not a major problem. However, buying activities occasionally include them in contracts only because they were in earlier contracts involving the same contractor, even if the items and shipping terms are completely different. Also, the inclusion of FOBOMS and GMSW is up to the discretion of the many individual buying activities. Even with these disparities, there is little evidence of widespread boilerplating and it does not cause problems for DLA.

IV. CONCLUSIONS

The FOBOMS and GMSW clauses protect Government interests by making contractors aware of shipping requirements and responsibilities. Therefore, it would not be wise to stop using these clauses. However, DLA does need to change the way it reacts to payments involving these clauses.

This study found that there were no valid reasons why API payments should be stopped when these clauses are present. The vast majority of contractor payments are delayed now anyway due to the cash management system. This delay allows enough time for any reviews that might be necessary. Letting these payments go API instead of creating a manual payment would save about $316,000 each year. (See Attachment 1 for computation of savings.)

The reviews which are done to check for compliance with these clauses have been shown to yield almost no cost savings. The cost of doing these reviews, which is about $26.71 each, makes this a very expensive program for which the benefits are extremely small. We project that about 14,000 reviews per year are done DLA-wide and that the Defense Contract Management Command (DCMC) spends approximately $374,000 yearly to do these reviews (See Attachment 2). Our current procedure of stopping API and having Transportation review all contracts with these clauses is wasteful and should be changed.

However, eliminating all reviews would not be a viable option because the possibility of repeated fraudulent charges would exist. Even though this scenario is unlikely, to protect Government interests, some reviews should still be done. One option would be to have an outside contractor do the reviews. Also, new criteria for doing reviews could be determined by the Transportation office, such as a dollar amount threshold for contracts. Because the level of contractor compliance is high, using a sampling plan would be a more viable option. A

stratified sampling plan that concentrates most heavily on large dollar amount contracts would be the best type of sampling to use. A MOCAS programming change would not be necessary because the actual sampling could be done in the Transportation office using existing MOCAS listings.

V. RECOMMENDATIONS

A. Do Not Stop API. Do not stop automatic payments when either or both of these clauses are present. The vast majority of payments suspend for 25 days for cash management. Therefore, for most payments there is sufficient time to review a contract for compliance, if necessary, before the final payment is actually released. Based on the two-week sample of MAAPR messages, not stopping API for these messages would yield a yearly savings of $316,000 (See Attachment 1).

B. Use A Stratified Sampling Plan. Do not review compliance of every contract that contains these clauses. The reviews done by the Transportation Office to check for compliance have provided almost no payback. Because compliance with these clauses is so high, the Government rarely needs to collect any overpayment. The TOAA listing notifies the Traffic Management Specialist before the final payment is made. This person could use the listing but review only a sample of the shipments on each listing.

Since contractor compliance is extremely high, we recommend using a stratified sampling plan to select shipments for review. Stratified sampling would be much more cost effective than our current procedures. For example, reviewing just 1 out of every 15 shipments would save almost $350,000 each year (See Attachment 3). In order to realize the highest payback from reviews, the sampling plan should concentrate on reviews of shipments for large dollar amount contracts. This type of sampling would not require a MOCAS system change because Transportation would do the actual sampling using listings MOCAS already generates.

Attachment 1

Cost of Manual Payments Due to FOB ORIGIN/MINIMUM SIZE and/or GUARANTEED MAXIMUM SHIPPING WT

Based on two-week sample of MAAPR messages:

389 MAAPRs (1.98% of all MAAPRs) had FOBOMS and/or GMSW as the only message(s) stopping API.

1.98% X 799,253 manual pays per yr. X $19.98 (cost per manual pay)

= $316,187/yr.

Attachment 2

Cost of Transportation Specialist to Review for Compliance

GS-11 Step 5 Hourly wage		Fringe benefits		Leave and Training adj.		Hours per review
16.90	X	1.2955	X	1.22	X	1.0

= $26.71 per review

$26.71 X 14,000 reviews per year = $373,940 per year

Attachment 3

Annual Savings Associated with Possible Sampling Plans

Which Final Shipments Reviewed	Number of Reviews	Cost of Transportation Reviews	Savings on Transp. Reviews	Total Savings(1)
All (currently)	14,000	$373,940	---	$316,187
1 of each 10	1,400	$37,394	$336,546	$652,733
1 of each 15	933	$24,920	$349,020	$665,207
1 of each 20	700	$18,697	$355,243	$671,430

(1) - Total Savings figures include savings from performing fewer transportation reviews and savings from paying API instead of manually.

APPENDIX J

ELECTRONIC DATA INTERCHANGE (EDI) INITIATIVES FOR CONTRACT PAYMENT

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I. Introduction

This study examines ways that Electronic Data Interchange (EDI) could be used to avoid manual input, reduce errors and increase the Automatic Payment of Invoice (API) rate. On 11 September 1990, an Executive Level Group (ELG) for Defense Corporate Information Management submitted its "Plan for Corporate Information Management for the Department of Defense" to the office of the Secretary of Defense. Some of the issues addressed by the ELG apply directly to specific contract payment operations.

Errors are introduced into the Mechanization of Contract Administration Services (MOCAS) payment data base at various points in the payment cycle. When a procurement instrument (contract or contract modification) is written, a clerk at the buying activity will input the data into the procurement data base (Standard Automated Materiel Management Systems - SAMMS, Acquisition Management Information Systems - AMIS, etc.). A hard copy of this procurement instrument is then sent to the administering activity where the data is manually input into the MOCAS data base. After contractors perform pursuant to contract they mail an invoice for payment, typed by contractor personnel, to the payment office. This invoice data is also manually entered into MOCAS. A keypunch error at any point in this cycle will result in inaccurate MOCAS data. Inaccurate unit costs, quantities, Accounting Classification Record Numbers (ACRNs), or other data elements could stop API. Given the extraordinary number of payments made by the Defense Contract Management Command (DCMC), and by the Defense Finance and Accounting Service (DFAS) in particular, the likelihood for errors is great.

Part of the inaccurate data base problem can be addressed through the use of EDI. For example, the most prevalent single cause of manual payments was the Material Acceptance and Accounts Payable Report (MAAPR) message of MAAPR-INV $ NOT EQUAL (MAAPR and Invoice dollar amounts are not equal). This message occurs on 30 percent of all manual MAAPRs. Most manual payments with this message are due to either an input error or a data receipt-timing problem. The timing problem happens when a contract modification that alters the contract price has not yet been received by the payment office. Use of EDI could eliminate most data input mistakes and the timing problem.

Department of Defense (DoD) contracting offices currently employ EDI technology through Military Standard Contract Administration Procedures (MILSCAP). MILSCAP is a set of electronic documents designed to allow buying activities and contract administration offices to send data back and forth regarding the content and status of contracts. The MILSCAP contract abstract allows the buying activity to electronically transmit contract information from their data base into MOCAS without the need for clerical intervention.

Contract modifications provide an especially fertile field to reap benefits from EDI technology. Whenever a contract is changed and an invoice beats the hard copy modification to the payment office, a manual payment results. Using MILSCAP modifications to pay, instead of waiting for hard copies, could greatly reduce the number of manual payments due to the speed of EDI. MILSCAP was designed to allow the electronic transmission of structured and discrete data; therefore in theory the quality of MILSCAP data should not pose a hindrance.

EDI also lends itself well to the area of invoicing. Currently when invoices are received they are sorted by hand to the proper payment center input cell where they are typed into MOCAS. Two Defense Contract Management Districts - DCMDM (Mid Atlantic) and DCMDN (Northeast), along with the Defense Systems Automation Center (DSAC), have efforts under way to allow contractors the option of submitting invoices electronically which can then be loaded directly into MOCAS.

II. METHODOLOGY

Separate analyses were done for contract and invoice data input, the two payment areas that involve most of the data input in the payment centers. The evaluations look at using MILSCAP for input of contract and modification abstracts, and using EDI for invoicing. The analysis is based on interviewing personnel involved with contract payment, and other research of payment procedures and MILSCAP documentation.

A. MILSCAP Contract Data. Approach:

1. Analyze whether MILSCAP has the data that is required to pay or can be updated to include such data.

2. Evaluate the effort required and the practicality of updating MILSCAP.

3. Assess the costs and benefits of updating MILSCAP.

B. Electronic Invoices. Approach:

1. Identify practical methods of achieving electronic invoice transmission. Review the status of current DLA/DoD initiatives in this area.

2. Assess the costs and benefits of EDI for invoicing.

III. ANALYSIS AND RESULTS

A. MILSCAP. According to the MILSCAP manual (DoD 400.25-5-M, page 3-2), one of the uses of the contract abstract by contract administration offices is to create a suspense for receipt of hard copy requirements. This is how payment offices are now using the abstract.

When an abstract is received, a data base entry for that contract is created. Two MAAPR messages, AWAITING HARD COPY RECEIPT, and MANDATORY REVIEW/OTHER, are generated. Until the hard copy document of the contract is received, invoices received on that contract will be paid manually.

Abstracts generally are received in one of two forms: a "tailored" abstract from those activities not yet using fully implemented MILSCAP, or a fully implemented abstract. The "tailored" abstract contains just enough data with which to create a suspense for receipt of the hard copy contract. A full scale abstract contains all the data intended for abstracts, but is still slightly less than needed for payment. Full scale implementation of MILSCAP was deferred in 1973 due to difficulties encountered in testing. MILSCAP abstracts were not intended to be used as the basis for making payments to contractors. However, data from a fully implemented MILSCAP abstract is very close to being sufficient for payments. Our research found that finance personnel had two main objections to using abstract data for payments -- unreliable data and insufficient data to use as a basis for a payment.

1. MILSCAP Data Accuracy. This study did not sample to determine the MILSCAP abstract error rate. However, DCMDS has done studies in the past five years which documented MILSCAP error rates from ranges of 2 percent to 30 percent. Management personnel at the Defense Contract Management District South (DCMDS-MR) stated that the lower end of the spectrum tended to reflect Army MILSCAP error rates with the higher end generally representing DLA Inventory Control Point (ICP) activities. MILSCAP data collected by the DCMDC-C payment personnel for a DLA Office of Policy and Plans (DLA-L) survey showed that MILSCAP transmissions experienced a rejection rate of approximately 5 percent. Error rates indicate the accuracy of data in MILSCAP contract abstracts that transmit. Rejection rates indicate the amount of abstracts that fail in the transmission stage.

In general, payment personnel were convinced that MILSCAP data has an unacceptably high error rate. This leads to the self-fulfilling prophecy that no one uses the data because it is bad, and the data is bad because no one uses it. However, the MILSCAP Administrator at the Defense Logistics Standard Systems Office (DLSSO), assessed the MILSCAP data error rate as likely to be no worse than the MOCAS error rate. The data originates and is generated by the procuring activity's data base and is transmitted electronically. Thus, this data certainly has the potential to be more accurate than the data manually input into the MOCAS system.

2. Adequacy of MILSCAP Data for Payment. Research and interviews concerning what additional data was needed to make MILSCAP abstracts comprehensive enough for payment turned up a fact sheet written in 1982 by the DLA Comptroller (DLA-C). The fact sheet listed four reasons for awaiting the hard copy before making any payments:

a. There is no data element for the "Evidence of Shipment Required" clause.

b. There is a limit of five contract provisions which can be identified in the abstract.

c. There are no data elements for any "Certification of Invoice Required" provisions. These certifications may be by the Accounting and Finance Officer (AFO), Administrative Contracting Officer (ACO), Procuring Contracting Officer (PCO), Terminating Contracting Officer (TCO), United States Dept. of Agriculture (USDA), the Contractor, or an auditor from the Defense Contract Audit Agency (DCAA).

d. There are no data elements for "Mandatory Review" provisions. These reviews may be "Lumber," "Steel," or "Textile."

Other data elements that are not included in MILSCAP contract abstracts, but are necessary for payment are remittance address (if different from bid/offer address), and progress payment rates. If all of these issues can be properly addressed, there is no reason that MILSCAP contract abstracts cannot be used for invoice payment.

3. Examination of MILSCAP Objections. Two objections to using MILSCAP for payment were that contract provisions were not abstracted and that there was a five clause limit on the MILSCAP abstract Special Contract provisions field. The MODELS program lifts the limit of five on the special contract provisions field which solves both of these problems. Another objection is that better validation is needed. This could also be solved by using the special contracts provisions field for a data element that would validate the presence of a signature on the contract. Still another objection is that the quality of MILSCAP data is not good enough for payment without having received the hard copy document. However, since SAMMS data will now be used by MOCAS for payment, without hard copy, there should not be a reason why MILSCAP data could not also be used for payment. A detailed analysis of what is necessary to make MILSCAP data adequate for payment is found in paragraph III B 1 a of Appendix D.

4. DoD Full MILSCAP Implementation Efforts. Another problem with using MILSCAP abstracts for payment is the use of "tailored" abstracts. These abstracts contain only basic contract information which is used for maintaining a control record for that contract. Initiatives are currently under way in DLA, the Air Force, and the Navy to convert activities using "tailored" abstracts to fully implemented MILSCAP abstracts. The Army currently has fully implemented MILSCAP abstracts.

- The DLA initiative to convert MILSCAP to a fully implemented system is called "Complete SAMMS/MILSCAP Abstract." This initiative seems to be progressing as planned. The current estimate for implementation is September 1991. DLA reports the progress of this

initiative semiannually to DLSSO. Their last report to DLSSO (November 1990) stated the program was still on schedule and that the implementation date should be met.

- The Navy initiative, "ICP Resystemization," will allow both the Aviation Supply Office (ASO) and Ships Parts Control Center (SPCC) to transmit fully compatible MILSCAP documents. The currently scheduled implementation date is March 1991. Unfortunately, the modules associated with contract abstracts have been pushed back about a year. In the current system, contracts for Foreign Military Sales (FMS) contracts and contract modifications are not abstracted. When ICP Resystemization is implemented these will be transmitted in a fully compatible manner.

- Within the Air Force, the Air Force Systems Command (AFSC) utilizes complete MILSCAP abstracts, while the Air Force Logistics Command (AFLC) does not. AFLC's initiative to convert their contract abstracts to fully compatible MILSCAP versions is Contract Data Management System (CDMS). This effort was originally intended for completion in FY 88. However, this date has been pushed back further and further to the latest estimate of FY 95, which may still be optimistic. Due to the slow progress and continuing setbacks experienced, it has become a possible target for budget cutbacks. The AFLC point of contact for this project has labeled the fate of CDMS "shaky at best."

Should MILSCAP be fully implemented throughout DoD Procuring and Administration offices, it is possible that the enormous quantity of data being transmitted back and forth could create problems for those activities that still transmit at low baud rates. (Baud rates are a measure of the speed of transmission. One baud equals one-half character per second, e.g. 300 baud is 150 characters per second.) However, these problems would not be specific to MILSCAP EDI uses. Any kind of EDI transmission utilized in great quantities would raise the same issue. Regardless, any expenditures to upgrade transmission equipment to necessary baud rates would likely be far outweighed by the benefits of MILSCAP.

B. Electronic Invoicing. Contractor submission of invoices is an excellent application of EDI. Currently contractors submit a commercial invoice or a DD Form 250, Material Inspection and Receiving Report, via the U.S. Postal Service. The invoice data is manually input at least twice (by the contractor onto the document and by the payment office into MOCAS). Errors can arise during any part of this process and may cause the invoice to be paid manually. Generally, any input error concerning price or quantity will prevent API. Use of electronic invoicing will minimize input errors by transmitting data directly from the contractor to the Government's data base.

Two DCMDs are currently using versions of electronic invoicing. Efforts by other districts have only been on a case-specific basis. DCMDN (Boston) is using magnetic tapes to transmit invoice data from

contractor to Government. DCMDM (Philadelphia) is using an Electronic Bulletin Board System (EBBS) and also a floppy disk system. DSAC is currently developing an electronic invoicing system for DFAS.

1. DCMDN EDI Invoicing System. DCMDN's efforts using magnetic tapes have been fairly successful. The major advantage to the contractor is the ability to control the quality of the data input into MOCAS. The cleaner the data input, the more likely the contractor is to get paid on time. The Government saves the labor that would have been necessary to input the invoices manually. Midsize to smaller contractors, though, are not likely to benefit from this system. A large number of invoices is necessary to achieve payback. Many of these smaller contractors probably would not have access to magnetic tape equipment or technology. There is no benefit to the contractor in mailing time, as the tapes still must be mailed.

2. DCMDM EDI Invoicing Systems. The DCMDM initiative is the Contractor DD Form 250 and Invoice Electronic Transmission (CDIET), originated in the former Cleveland region. DD Form 250 and invoice data is transmitted electronically using an EBBS. Contractors upload invoice data to the EBBS. It is then downloaded to a microcomputer, split out into separate files, and finally uploaded into MOCAS. This system saves the contractor the two day mailing time, sends him an electronic receipt, and controls the quality of the data input into MOCAS. CDIET has two drawbacks. Managing the EBBS is the Government's responsibility, which may be expensive to the Government and inconvenient for the contractors if not properly administered. The CDIET will not accept Bureau Vouchers nor Progress Payment Vouchers.

Another DCMDM EDI initiative is the floppy disk system. This system allows contractors to submit invoices in flat ASCII files on floppy disks. While this may not be "classical" electronic data interchange, it is convenient for both contractors and the Government. Contractors follow a standard format and submit invoices in 80 column rows in ASCII files. Submissions are then run through a BASIC program to ensure adherence to the prescribed format. All types of invoices (DD250, commercial, progress payment, bureau voucher) can be submitted through this system. Hard copies of the invoices are checked in and processed along with the floppies. Invoices are then uploaded to a DMINS file which is transmitted to MOCAS daily.

3. DSAC EDI Work. The current DSAC effort (which is being referred to by DSAC as simply the "DFAS Project") encompasses most of the advantages of the other initiatives. This project began informally in July 1990. As of December 1990, the project had been temporarily put on hold. No formal milestones have yet been set. However, most background work has been completed. It has been estimated that development work will take about 8 to 12 months depending on the contracting-out that is done. Very few changes to existing software and hardware are anticipated, nor is much equipment acquisition anticipated. Some telecommunications equipment will be needed, but the requirements are not yet known. As currently planned, the Government

will contract with a Value Added Network (VAN) to provide the communications network. Contractors will contract with the VAN for use of the services. The capital investment required of contractors by the VAN should be small, with the associated cost to use the service also manageable. When contractors submit invoices to the VAN, they are transmitted to the DSAC developed Logistics Information Exchange (LINX). LINX will then separate the invoices into files for each district. MOCAS receives these files and processes the invoices for payment. LINX then queries MOCAS and gathers status information on each invoice. This information is then transmitted back to the VAN where it is made available to contractors. Pending GAO approval, the system will also generate hard copy invoices of the transmissions for file/audit purposes if needed. All types of invoices may be transmitted through the VAN.

IV. SAVINGS AND BENEFITS

A. MILSCAP for Contract Data Input. Cleaner and more timely data should reduce a great amount of manual payments of invoices, especially those generated by the message MAAPR-INV $ NOT EQUAL. The MAAPRs with this message that are affected are those where the invoice amount is greater than the MAAPR amount, since another recommendation already resolves the situation when the invoice amount is less than the MAAPR amount. Savings from the MAAPRs with this message due to the modification timing problem and transportation charge oversight are detailed in paragraph III C of Appendix D. Most of the other MAAPRs with this message are due to either contractor invoice, Government input, or acceptance data input error. From paragraph B of Attachment 2 to Appendix D, 4.2 percent of all manual MAAPRs are due only to the MAAPR-INV $ NOT EQUAL message, but not the modification timing and transportation charge oversight problems. If even half of these MAAPRs were corrected by using MILSCAP for contract data input, 2.1 percent of all MAAPRs could be avoided. The additional annual savings would be over $330,000 (nearly 17,000 manual MAAPRs avoided, saving $19.98 each).

Savings will also be realized in the area of contract data input and MILSCAP. There are approximately 185 contract input clerks throughout DCMC, with 89 inputting original contracts and 96 inputting contract modifications. Based on an average grade of GS-5 Step 5, and benefits of 29.55 percent, these clerks cost about $4.61 million per year. These costs are the same as those already detailed in Appendix D for data input clerks.

B. EDI for Invoice Input. The use of EDI technology in the area of invoicing should result in a dramatic reduction in manual input effort. Every invoice transmitted electronically corresponds to one less that has to be input manually. There are approximately 110 invoice input clerks throughout DCMC. Based on an average grade of GS-4 Step 5, and benefits of 29.55 percent, these clerks cost about $2.45 million per year.

Workyear savings are not the only benefit to the use of electronic invoicing. Cleaner and more timely data should result in more timely contractor payments. This would reduce interest payments made to contractors and increase goodwill.

V. CONCLUSIONS

EDI technology can significantly increase the accuracy of the MOCAS data base as well as maximize the use of the API system. MILSCAP, when properly modified and updated, is a cost effective way to eliminate costly errors due to the repetitive manual input of contractual data. Furthermore, when a properly utilized MILSCAP system is coupled with an EDI system for invoice data, the Government can realize dramatic savings. These savings stem from two benefits associated with the use of EDI in the contract payment area. The first is a reduction in clerical effort necessary for data input. The other is cleaner and more timely data.

The previously mentioned ELG for Defense Corporate Information Management stated in their situation analysis for DoD Information Management that "Data entry in many functional areas remains a labor intensive activity, subject to many errors and often requiring reentry." They further stated that "Electronic transmission of documents exists in limited applications within DoD. Currently, much data exchanged between DoD and its suppliers exists in digital form, but must be converted to hard copy for use by the Department." The ELG's "Vision of the Future - DoD Information Management in the Year 2000" stated that by the year 2000 they expected that "non-value added work had been reduced," "most data are being entered into information systems without being handwritten or typed," and "electronic data interchange and funds transfer are now in place, speeding financial transactions and the exchange of technical and management information." One of the 14 "Guiding Principles" used by the ELG was "Data will be entered only once." A fully and properly implemented MILSCAP system, in coordination with a functional electronic invoicing system will lead the payment function away from today's labor intensive activity and toward the ELG's vision of the future.

VI. RECOMMENDATIONS

A. MILSCAP Enhancement. A system to transmit standard DoD contract data electronically is vital to efforts to further modernize contract payment functions. MILSCAP is the means of doing this now. No doubt, MILSCAP has developed a poor reputation over the years. However, it is very likely that a replacement system would look remarkably similar to the MILSCAP of today and be far more costly than altering MILSCAP. MILSCAP contract abstracts were not originally to be used for payments. But they could be with some concerted efforts.

The MODELS (Modernization of Defense Logistics Systems) work done by the Defense Logistics Standards Systems Office to enhance MILSCAP should be coordinated with the DLA initiative, titled "Complete SAMMS/MILSCAP Abstracts," to convert MILSCAP abstracts to a fully implemented system. This effort should ensure that the MILSCAP contract abstract and modification contain all of the information necessary for payment to be made. DFAS should have a key role in reviewing the goals of this overall effort. This integrated effort should address the following areas:

1. The MODELS program, as described in the section above, needs to be implemented in all procuring and contract administration activities as expeditiously as possible. The conversion from fixed length records to variable length records, along with the addition of necessary MILSCAP data fields, will allow for the transmission of as many special contract provisions as necessary.

2. The use of "tailored" abstracts should be phased out as soon as possible. DLA, Navy, and Air Force all have initiatives in the works to accomplish this. However, the Air Force's effort, Contract Data Management System, has historically progressed slowly and now its future is in doubt. DLA and DFAS should exert influence to see that this project continues and is completed. For example, the DFAS could mandate a surcharge for all vouchers from buying activities that don't use EDI technology to transmit payable contract and modification data. Completion of all three of these efforts will allow for the transmission of fully implemented abstracts and modifications adequate for payment.

3. Potential benefits include eliminating tens of thousands of manual payments, each at a cost of $19.98, and eliminating the clerical staff inputting contract information, which currently numbers 185.

B. Electronic Invoicing

1. DLA should develop and support a single electronic invoicing system. The DSAC electronic invoicing initiative is a way to accomplish this.

2. The requirement of contractors to make a small capital investment to use the VAN, along with the requirement to contract with the VAN, may preclude smaller contractors from taking advantage of electronic invoicing. The volume of Government contracting these firms have may not justify their spending for VAN usage. However, the Government would still benefit from its usage by large contractors. To get EDI benefit for smaller contractors DLA should continue to support the floppy disk invoicing system.

3. Potential benefits include reducing clerical staff by the approximately 110 necessary to input contractor invoices, and increasing the number of payments made on a timely basis due to cleaner and more timely data.

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The Mechanization of Contract Administration Services (MOCAS) system pays contractor invoices automatically if data base information exactly matches corresponding invoice information. Invoices are paid manually if an error has been made anywhere in the data input process, or in cases where a decision (usually at the payment clerk level) is required to control expenditure of government funds. This study estimated that a manual payment costs $20 more than if the payment was solely automatic. A Pareto analysis of frequency data developed for this study identified eight manual material acceptance and accounts payable record (MAAPR) messages for in-depth cost benefit analysis. The results showed numerous manual payments could be avoided by implementing several, mostly minor, procedural and MOCAS system changes. Major changes involve recommending implementation of several electronic data interchange (EDI) initiatives identified in the study. Implementing all the recommendations in this study would save DLA over $10 million annually, as well as increase the speed and accuracy with which it pays contractors.

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